Digitized by the Internet Archive
in 2026

https://archive.org/details/pocketlibrarypfw0005char

OUTLINE OF PHILOSOPHY

PART I

POCKET LIBRARY OF THE
WORLD'S ESSENTIAL KNOWLEDGE

VOLUME V

OUTLINE OF PHILOSOPHY

PART I

By CHARLES GRAY SHAW, PH.D.
PROFESSOR OF PHILOSOPHY, NEW YORK UNIVERSITY

FUNK & WAGNALLS COMPANY
NEW YORK *and* LONDON

COPYRIGHT, 1929, BY
FUNK & WAGNALLS COMPANY
[Printed in the United States of America]

Copyright Under the Articles of the Copyright Convention
of the Pan-American Republics and the
United States, August 11, 1910.

CONTENTS

OUTLINE OF PHILOSOPHY—PART I

PAGE

INTRODUCTION 11

Every-day Experience—The Man Without a Country—"The Philosopher Is Extinct"—Philosophy, Religion, Science—The World Is Too Much with Us—Philosophy and Faith—The Return of Anthropomorphism—Philosophy and Fact—Knowing and Thinking.

THE DIVISIONS OF PHILOSOPHY 36

Theoretical and Practical—The Way of Knowing—Folk Philosophy—The Way of Doing—Man a Valuing Animal—The Methods of Knowing—Old Ways and New—Near-sighted and Far-sighted—The Unnatural Order of Events—Knowledge Did Not Begin at Home.

I—STANDARDIZED SYSTEMS 58

THE METHOD OF RATIONALISM 58

Knowledge by Reminiscence—Truth Is Like Eros—Descartes' Discovery—The Egoistic Eureka—The Leviathan on a Hook—Primogeniture in Philosophy—Before and After in Thought—How Thought Anticipates—The Rope-Stretchers of the Nile—Three Kinds of Space—The Romance of Rationalism—Logical Intuition—Moral Certainty—The Self-evident in Politics and Theology.

THE METHOD OF EMPIRICISM 91

Experience as Teacher—The Two Bacons—But Science Came Down from the Skies—Locke's Empirical Essay—How Experience Provokes—Applied Experience—The Use of

PAGE

Experience—Experience Is Human—What Are the Facts?—What's the Connection?—The Use of Methods—The Experiment of Prohibition—Where Induction Lags—Architect and Builder—Man the Master of Experience—Experience Outdoes Itself.

II—Irrational Schemes 129

The Departure from Dogmatism—The Revolt Against Reason—Earlier Eruptions—Direct Action.

Mysticism 140

Latter-Day Mystics—Sacrifizio dell' Intelleto—Life Natural and Spiritual—Poetic Insight—Moral Intuition—The Enormous Dream of Religion—Bergson's Intuition—Freedom and Truth—Drawing the Kites in—The Ignorance of Intellect—Intellect Leans on the Will—Natural Geometry—The Eden of Mind and Matter—The Living Absolute—The Reality of Time—The Flux—Snap-shot Judgments—But Will Not Thought Do?

OUTLINE OF PHILOSOPHY

PART I

OUTLINE OF PHILOSOPHY

PART I

INTRODUCTION

THE term, "Philosophy," has its place in popular speech as well as in a college curriculum. In a general way, philosophy indicates a mood enjoyed by a well-balanced mind. It suggests a calm and courageous outlook upon the world on the part of one who has learned to view life broadly and enjoy the consolation which comes from such steady vision. A person is spoken of as being "philosophical" when he is in the habit of accepting the course of human events in an unruffled manner. Such a person takes things "philosophically" when he is contented amidst the vicissitudes and painful experiences of life—disease and disaster, sorrow and misfortune, and even death itself. Now, this philosophical attitude of the popular mind, while it reveals a mood rather than a method, does not fail to contain the essential principle of all philosophic speculation. We are all philosophers naturally in a way that we are not all scientists.

The ideas which are involved in the philosophical mood, whereby the reflective person

substitutes thought for feeling, are those of Universality and Necessity. The misfortune which has happened to one person is likely to beset all, and that which seems to have occurred by chance is seen to have come about in accordance with necessary principles. That is what the popular mind feels when it philosophizes; that is what philosophy itself works out according to the laws of logic. But the popular mind moves slowly and painfully toward the conclusions which the philosophical mind is able to draw at once. Yet both agree in setting up as the standard of judgment the idea of universality. It was in this spirit that Goethe, who stood midway between the two types of mind, affirmed: "Death must be a benefit, because it is universal."

In its most definite form, then, philosophy is the art of living and thinking, feeling and willing by means of universals. Our natural tendency is to proceed according to immediate impression, personal prejudice or political bias. Hence we introduce our statement of an issue with the personal preliminary—"The way I look at the question," or "From my point of view." We are far less likely to say, "According to the principles of sound reasoning," or "From the standpoint of pure logic." And yet if we took none but the philosophical point of view, life would come to a standstill and we should soon

be petrified, since the force of life and the work of the world proceed from narrow and intensified views rather than from philosophical generalizations. Philosophy cannot expect or even desire to eliminate these personal and prejudicial views from the minds of men, but it can emphasize such universality as they contain and thus round them out. Then it may change the good man into a moralist and, perhaps, make a politician over into a statesman.

When philosophy withdraws from the world, as it has always done, it elaborates these universal principles for their own sake. Mere thought becomes Rationalism; the sense of happiness deepens into Optimism; and religious feeling solidifies into Theism. Philosophy at its best, or worst, is the tendency to let thought drive out all personal feelings and all particular impressions so that the philosophical thinker may find his true home in a system of universals, or World of Ideas.

Every-day Experience

But still the art of thinking by means of universals, which may seem like lines of latitude in the frigid zones, is more or less akin to the usual workings of the human mind. Molière's M. Jourdain was surprised to learn that he had spoken prose all his life without knowing it. The average person may be gratified to learn

that all his life he has philosophized unconsciously. For, universals of a certain sort appear everywhere and arch over every-day experience as the firmament over the little earth. When one senses something blue, he really has a perception of "blueness" to which the particular shade of blue belongs. Indeed, the act of apprehending the particular color blue involves the act of perceiving color generally. In this perception of color there is also the higher idea of quality, and when one has reached that idea he has gone about as far as the mind can proceed along that line. Thus, simple sensation on the part of the human mind is akin to the act of dropping a stone into the water; the ever-widening circles indicate the universal range of reason. Apparently, we are so constituted that we cannot enjoy sensation without thought or see the small without the large, or grasp the particular apart from the universal.

In the act of perceiving individual objects, the same smooth passage from the particular to the universal is a matter of common experience. When one recognizes a man with whom he is acquainted, his mind grasps the idea of both the individual man and mankind. To notice an elm is to become aware of tree life; to look at some familiar animal, as a horse or cow, is to entertain the idea of animality in distinction from other forms of life; and to pick up a stone

is to enter into relations with matter as such. The rustic who for the first time saw a giraffe and who said, "There ain't no such animal," was decidedly logical. For we hardly perceive a particular thing without considering the class to which it belongs, as specimen to species.

In addition to such universalizing tendencies as are found in sensation and perception, philosophy observes the more refined and inclusive forms of Space and Time. Out of these proceed the mathematical conceptions peculiar to science, but they are none the less modes of every-day experience. All objects are found to exist in the form of space; all events take place according to the form of time; so that the temporal and spatial are the most universal ways in which the world appears, the most comprehensive forms of which the mind is capable. And yet these mighty, almost omnipotent, ways of grasping reality lie at our door, or may be had for the asking. They are part and parcel of nature just as they are native to the mind which would interpret the natural order of things and events. To know "the flower in the crannied wall" may or may not be to know the secret of all nature, but to know one single solid, however small, is to grasp all perceptible reality, and to realize the depth of one instant is to fathom the secret of all time. Philosophy may desire to refine the natural universals of color and tone, just as it may strive to

analyze the ultimate meaning of space and time, but it cannot proceed to these larger, finer universals until it has accepted the natural, simple universals open to all minds in their common operations.

But there comes a time when philosophy, which shares its universals with plain thinking, must break with common sense and go its own superior way. This break occurs when philosophy turns away from the pictorial world of percepts and attempts to discover the World of Ideas. The broad earth, with its deep seas and lofty mountains; the spacious skies, with their mythical constellations and vast galaxies, are dismissed from the philosophical mind which aspires to find the true situation in an impalpable, imperceptible world of intellectual forms. It is this unearthliness which is the most characteristic feature of speculative philosophy; it is this transcendentalism which has given the impression that philosophy is an isolated form of study and philosophers in a class by themselves. This amounts to saying that there is something peculiar about philosophy, altho the mere recognition of strangeness does not inform us as to wherein this exceptional state of affairs is to be found.

The Man Without a Country

The peculiarity of philosophy, however, is this—that it has no field of its own, so that it must carry on its operations by what seems to be a system of trespassing. When one takes up the study of physics, one has before him the world of matter and motion. If chemistry be his vocation, he finds the world of atoms ready for his investigations. On the psychological side of science, there is something like a science of mind, as also a field for him who will survey the expression of mind in history. Art and religion appear to be elusive things, but the study of them is realizable on the basis of concrete beauty in the arts and positive religion in the history of human worship. It is only when one takes up philosophical study that one looks about in vain for appropriate and definite subject-matter. It might seem as tho the same were the case with mathematics, since the mathematician, having merely glanced at the world of space, proceeds to build up geometrical systems without regard to what actually exists in the spatial order of things. The mathematician, however, follows the analogy of reality in ways unknown to the speculative philosopher.

But, if the philosopher has no special field which might be called the philosophical one, in comparison with the physical, chemical and

mathematical, there is a sense in which all the fields are his. This, of course, suggests a mental loftiness or superiority complex, which, however, is not natural with the philosophical mind in its well-known humility. The philosophical mind deals critically with the material which the special sciences examine only up to the point which interests them or seems pertinent to their operations. What orthodox physicist is there who would attempt to tell what he meant by matter? Or what geometer would look away from the special forms of space which he is studying to tell us something about the ultimate nature of the space with which he is dealing? The psychologist is just as uncommunicative about mind, except as he casts doubts upon its existence.

The philosopher, however, is not satisfied with the special truths which he finds in the special sciences, but would find out what they really amount to. In this sense, the philosopher is analogous to an auditor, who is ignorant of the art of making money, but who can set aright the accounts of those who specialize in money-making. Or, the philosopher is akin to an attorney who cannot himself engage successfully in a practical enterprise, as of business, industry or finance, but who can advise his client whether his activities are in accordance with the law. The auditor, or accountant, knows how to familiarize himself with the essentials of a corporation as

far as the sinews of business are concerned, just as the lawyer with his flexibility of mind can easily come abreast of the idea involved in a title, merger or real estate scheme without having the practical knowledge which these things in particular involve. In like manner, the philosopher can observe the bearing of a system of physics, a school of psychology, or a new geometry, and set it aright in the eyes of reason.

The Philosopher Is Extinct

In reviewing the fields of others, as the physicist, chemist or geometer, because he has no field of his own, the philosopher is further embarrassed by the fact that he cannot point to any definite results achieved. In the field of the special sciences, it is quite appropriate to say, "Science has shown that all matter is controlled by the law of gravitation," even when we are not as sure of our gravitation as we used to be; it can assert that all matter is of atomic construction, even when the status of the atom is dubious. But the speculative mind would hardly say, "Philosophy has shown that whatever is, is," or, "The middle term must be distributed at least once." No; for it is the fate of the philosopher to conduct his speculations in the region of glorified skepticism, from which that which is settled is at once excluded. Like Lohen-

grin, the problem must depart as soon as its name is known.

The classic example of this is found in the theory of atoms put forth by Democritus, which was a philosophical theory until it was demonstrated by Dalton, when it became a scientific principle. The same might be said, perhaps, of Empedocles' theory of evolution, which became a scientific matter more than two thousand years later with Darwin. These are examples of the philosophic anticipation of scientific truth; but, as a rule, philosophy merely looks back and reviews the results which have been obtained by empirical science. If it can pass upon these, as accountant and attorney verify and justify the matters brought before them, it can accomplish all that may be expected of it.

The "philosopher" no longer exists, and it is only in an archaic manner that we have used that term to indicate one who is interested in the affairs of logic and matters of metaphysics. The "philosopher" passed away when the "scientist" arrived, which was at the beginning of modern times; hence we might say that the last of the Schoolmen, who themselves were not pure philosophers, were the last of the philosophers. Locke, Kant, Hegel and Schopenhauer philosophize, but they are not philosophers like Plato and Aristotle. Science has changed all that. If, however, the speculative thinker is extraordi-

narily absorbed in his ideas, and is able, further, to absorb the science of his day, he may still be spoken of as a "philosopher"; this was the case with Spinoza, hence we may speak of Spinoza as being the very last of the philosophers. But the situation in philosophy is akin to that in Faust's garden after the departure of Mephistopheles, when it was said, "The evil one is gone, but evil still remains." The philosopher has departed, but his philosophy still abides.

Those who advocate the study of philosophy have no desire to apologize for what seems like an unheard-of procedure on the part of the philosophic thinker. In fact, they glory in it as tho the paradox of a thinker without a field of research, like a patriot without a country, were pleasant to contemplate. At the same time, the defenders of faith in the unseen may point out that this other-worldliness is not as exceptional as it might appear, since it is indulged in by both religion and science, even when these are more realistic.

Philosophy, Religion, Science

Religion is famous for the way in which it has taught man to consider the unseen and to believe in such impalpable things as God and the soul. That which religion has ever kept before the mind of its adherent is the notion of a spiritual order in which man's true life is lived, and

which, after this life, will become his true home. But religion has tempered this transcendentalism with various symbols, edifices, images, and the like, so that the flight from the world was not as complete as the belief in things spiritual might seem to suggest. Furthermore, religion has always been associated with certain practises, so that the strain of its other-worldliness on the mind has been relieved by the exercise of the will. Moreover, the idealism which philosophy set up once for all as an eternal present was looked upon by religion as an experience to be postponed until the future.

The scientific breach with nature in the guise of a landscape and practical order of existence was made by Democritus almost at the moment that Plato was taking leave of the world of sense and change. It is true that Democritus was a philosopher, but the materialistic trend of his thought and his particular doctrine of atoms makes it possible and expedient to view his system in the form of ancient science. In full independence of Plato, and indeed in the very opposite of the Platonistic mood, Democritus effected an escape from the world of every-day experience; only he descended below its level while Plato transcended it. One exchanged the given order for a world of atoms, the other for a world of ideas; but both agreed tacitly that rational thinking must create a breach between

the world of common things and an order of theoretical entities. In the case of Democritus, this order was made up of infinitesimal corpuscles infinite in number, indivisible in their nature, identical in quality, and controlled by necessity.

But the most tantalizing form of the scientific repudiation of the perceptible world appears at the beginning of modern science, when the new astronomy of Copernicus came into being. According to this revolutionary view of the universe, man was called upon to accept an interpretation of things the opposite of what his senses had ever taught him. Common perception testifies that the earth is central and stationary, and it seems as tho the whole firmament moved around it: but the new astronomy set the earth in motion in an eccentric portion of the universe. In this manner, common sense was forced to yield to the theoretical notions of mathematics. At the present time, the unearthliness of science is receiving emphasis in terms of Relativity, which tends to reduce the familiar universe of real things to a gigantic system of waves, in which such familiar things as time and space, matter and motion seem to float about in ways which the lay mind must regard as decidedly uncertain.

The World Is Too Much With Us

But both the religious and scientific breach with nature fail to measure up to the sharp and abiding break which is a commonplace in the history of philosophy; for with them, especially in the case of science, it is more a change from one form of physicality to another, while philosophy has been intent upon passing from all forms of the physical to a thoroughly mental order of being. Where there is philosophy in the classic sense of the term, there is always an effort to banish the natural order for the sake of installing a mental world of universal ideas, and these universals are the reals of philosophical speculation.

Philosophy differs from both religion and science, not only in the way it transcends the natural order of things, but in its fundamental ideas and modes of procedure. Hence it will be fruitful to contrast these three major conceptions of nature and man. First of all they may be surveyed in the vertical order of their development, with religion as the mode of primitive thought, philosophy as the method of the ancients, and science as the modern type of human culture. This is not to suggest that the entrance of philosophy is the departure of religion or the coming of science the going of philosophy. No; it is rather the suggestion that

religion conserves the original dreams and presentiments of the awakening mind, that philosophy is the endeavor to substantiate as much of these as seems plausible, and that science is an attempt to view nature and man directly without much regard for the cherished beliefs or precious ideals which man has long indulged in. This must not be taken to mean that science is inhuman, since of the three forms of culture it has done the most to ameliorate the conditions of life on earth. It means only that science aims at creature comforts rather than at human character. Now, the contrasts which are to be made must naturally be from the standpoint of philosophy, for whose sake the importance of its companion systems will have to be minimized.

Philosophy and Faith

The most primitive and general reaction of the human mind to the world is found in Religion. Out of this fundamental faith came Philosophy, as out of Philosophy came Science. The religious reaction came into being and long held sway before man learned how to conceive of his view of nature and himself in the abstract forms of philosophy. The method which religion employed was that of belief, whose primary objects were God and the Soul. The spirit of such thinking was humanistic, or anthropomorphic, for it consisted in looking upon the objects of its be-

lief after the manner of man. Now, it was just this anthropomorphism which offended the philosophic spirit, once it was awakened among the Greeks, and brought about both the breach between believing and thinking and the founding of philosophy.

The conflict between ancient philosophy and religion, by no means as sharp as the conflict between modern science and religion, was inaugurated by Xenophanes about the middle of the sixth century B. C. What Xenophanes attempted to do was to substitute a monotheistic conception of God for a polytheistic one, as also to represent the theistic idea after the abstract manner of philosophy. "God is one, supreme among gods and men, and not like mortals in body or mind. The whole of God sees, the whole perceives, the whole hears. But without effort he sets in motion all things by mind and thought." After this polemical preliminary, Xenophanes proceeded to develop a kind of Monism, for he asserted that Being is one and all-embracing, devoid of both genesis and destruction, and everywhere and always the same.

The effect of this critical monotheism, or monism, which was felt by Parmenides and Plato, Socrates and Aristotle, was more positive than negative, since it resulted in the development of a religious philosophy rather than in the destruction of religious belief. It was the beginning

of what has since been the standard form of philosophy recognized as Idealism, Rationalism, Dogmatism, and the like. Wherever philosophy sets up the Absolute as its fundamental principle, there the influence of Xenophanes is felt even when not recognized. It lays down a method whereby reason takes the place of faith, and a metaphysical conception of the Deity tends to assume the position of a personal God.

But the anthropomorphism which Xenophanes sought to set aside in order that philosophy might supplant religion was not so easily dismissed. It is true that enlightened mankind has given up the idea of representing the Deity as a vastly magnified man, but not so true that it has ceased to look upon its problems with the eyes of a man. In place of a crudely anthropomorphic conception of Deity it set up a humanistic view of its own philosophy. It does this generally when in the form of Subjective Idealism it makes the being of things to consist in their being perceived, and when Objective Idealism looks upon reality as that which is thought by the mind. It is only because the emotions and practises of religion are left out of account that such idealism does not fall back into that anthropomorphism from which the radical Greek sought to deliver it.

The Return of Anthropomorphism

The return of Anthropomorphism in the form of Humanism has been signalized in the present century by the development of Pragmatism, which in a way tends to undo the work accomplished by Xenophanes and his Grecian followers. But there is a difference between the critical Anthropomorphism of our day and that of primitive times, since the primitive mind in its naturalness glided into its man-like notions as tho following the line of least resistance, while our Pragmatists have adopted their kind of Anthropomorphism because of their opposition to the Absolutism which had so long prevailed. The God of the Pragmatist may not be as human as that of the primitive mind, but He is thought of as finite, as is the case in the systems of Schiller and James and the writings of H. G. Wells. It may be noted at this point that the new physics, which attaches itself primarily to the name of Einstein, seems to lead to the idea of finitude generally in the form of finite space and a finite universe; but such a conclusion seems to follow from a mathematical abhorrence of the immeasurable, while in the case of Pragmatism the finitude of God is adopted as a belief of practical value and general utility for finite man.

Not only does the religious spirit of Anthropomorphism linger in the field of philosophy, but

the leading ideas of religion persist, altho in different forms. These are the ideas of God and the soul. In the religious mind, which evolved these ideas, God and soul are entertained with warmth and thought of in terms of spirituality. The relation between the soul and God is experienced with emotion, considered in a personal way, and usually marked by a certain amount of moral enthusiasm. The spirit of the relationship is that of worship, which obviates the necessity of any deep psychology of the soul or any penetrating ontology, or metaphysics, of the Deity. It is the time-honored situation in the religion of mankind.

But when Philosophy, instead of manufacturing entirely new notions of its own, lays hold of the traditional conceptions of spiritual life, it changes "soul" into "mind" and "God" into "Being" or "Substance." That which is lost is the warmth of these original conceptions and their religious worth: what is gained is clearness and consistency. When this transmutation has been made, the enlightened believer is made to feel that his belief in God and the soul, while no longer so splendid, is made more substantial by its rational affiliation with such abstract entities as "Mind," "The Infinite Substance," "Spiritual Life," and the like. The whole case thus undergoes a change of venue from the anthropic to the cosmic. What was the soul with all its

human needs and aspirations is now a thinking principle, while the former "God" has become the World Ground. The situation is philosophical instead of humanistic, and the problem of mankind is to solve the question of the Absolute rather than to enter into right, joyous and fruitful relations with the God of mankind's ancient faith.

A certain amount of this rationalism was adopted by Christian theology, which sought to preserve the warm traditions associated with the human soul and personal God; but when philosophy has been the main consideration, the prevailing atmosphere has ever been one of coolness, while the needs of mankind have been looked upon as tho they might be satisfied by clear ideas and convincing principles. At the present time, popular religion, while still interested in some conception of God and soul, tends to express itself socially, as tho it were wiser to exert the heart to love the brother whom one has seen than to attempt the love of a God whom one has not seen. At the same time, it is possible that religious education may have the effect, in part at least, of elevating the mind of the worshiper to the place where he will be able and willing to worship the kind of God which philosophy presents to his mind, and to exercise a form of love which Spinoza called *amor dei intellectualis*.

Philosophy and Fact

The relation of Philosophy to Science is by no means as simple as the adjustment of religious belief to speculative thought. This adjustment was made at an early period, when man had little of the sophistication or his ideas little of the detail which have been experienced in modern times, when science has undergone its astonishing development. However, it may be said at the outset that science emerged from philosophy in a manner parallel to the development of philosophy from religion. As far as the spirit of this change was concerned, there was less animosity felt by science toward philosophy than in the parallel case of philosophy and religion, for the opposition between the new physics and the old metaphysics was confined chiefly to the philosophy of Scholasticism, with the theological notions which were involved therein. But, in the midst of common intellectualism, philosophy and science exhibit wide differences, altho the philosophy of the present, aside from its scientific affectation, is trying genuinely to overcome them.

Chief among the differences between philosophy and science is the obvious fact that science has a definite field of investigation, which consists of the physical world. When the mind deals with the problems of physics, it has at its dis-

posal the rich and varied world of space and time, matter and motion, which are found to exist in a most palpable way and to behave in such ways as to permit scientific measurement. When one considers the problems of metaphysics, he is at a loss to recognize any distinct field of investigation, and in default of definite observation and exact measurement must content himself with general speculations about such vague and remote topics as substance and attribute, causality and change. It is true that the philosopher may borrow certain physical ideas, as matter or the conservation of energy, and just as true that the scientist may return the compliment by making certain use of metaphysical principles in connection with space and time. But the fact remains that philosophy must operate in the desert while his co-worker in science is privileged to cultivate a fruitful field.

Knowing and Thinking

This radical difference in the respective spheres of operation tends at once to provoke the conclusion that science knows while philosophy only thinks. Doubtless philosophy enjoys a certain kind of knowledge about things generally, to the effect that "whatever is, is" and "whatever happens has a cause"; but from such certain ideas philosophy is forever unable to identify any specific form of existence, as a

chemical element; or to determine the cause of any phenomenon, as that of a falling body. It is true that by pure speculation Democritus arrived at an atomic theory something like the exact scientific doctrine of to-day, and it might be said that in his principle of continuity Leibnitz anticipated the doctrine of evolution; but these happy presentiments of the speculative mind do not encourage one to advance the idea that philosophy, like science, is an avenue to exact knowledge of nature.

The manifest difference in the fields of philosophy and science is reflected in their respective methods of operation. Both philosopher and scientist observe the general sense of regularity which pervades nature; but then the speculative mind becomes possessed of the notion that this can be expressed by concepts, or general terms, while the scientific mind presses on further to the idea of controlling laws. One is guided by logic, the other by mathematics. Philosophy is satisfied to group things in such a way as to obtain classes of things which may be assembled, as it were, in circles of being. Science, however, desires to arrange things, as it were, along lines on which the array of details and the varying modes of behavior may be represented and reduced to strict measurement. In both the philosophic concept and the scientific law there is intelligibility, as also a measure of universality;

but the more flexible conception of natural law makes it possible for science to get into the very nature of things, as also to get control of natural forces and turn them in the direction of industry. Thus, instead of indulging a general contemplation of the world after the manner of the speculative philosopher, the scientific mind carries on a practical conquest of nature, whose forces are employed to convey convenience and comfort to human life.

The result, altho not necessarily the purpose, of science is utility. It may be that science will always retain a certain degree of pure intellectualism and will continue to operate in a spirit of disinterestedness, but the fact is that most of the results of science are absorbed by the utilities of human life. The principles of mechanics go into machinery; the laws of magnetism are used further to enhance the comforts of life; chemistry is turned into medicine; and biology ministers to the welfare of plant and animal life. Compared with these striking applications of scientific principles to the needs of human life, philosophy has practically nothing to offer, save perhaps the suggestion that true thinking will engender good action; but the way that logic serves ethics cannot be compared with the fruitful manner in which physics makes itself the servant of every-day life. Thus arose the old saying, "Philosophy cannot bake bread, but it

can give us God, freedom and immortality.'' Now, are not these products which science must ever fail to supply? We mortals cannot live by bread alone, and where there is no vision the people perish.

THE DIVISIONS OF PHILOSOPHY

Theoretical and Practical

Altho philosophy seeks to cover the whole range of existence by means of its universal ideas, it has but two general divisions—the Theoretical and Practical. One deals with the rational ground of the world, the other with the goal of human life. The twin questions which provoke these forms of thinking are, What is? What ought to be? These are the mighty interrogations put forth by the curious intellect and puzzled will. They might perhaps be said to spring from the sensory and motor areas of the brain. The first concerns itself with facts, ideas, and principles of good thinking. The second deals with standards of life, ideals of action, and the purposes which man would put into life. One moves about within the sphere of Truths; the other operates within the realm of Values.

Both of these speculative procedures move along side by side and share the responsibility of philosophy, but the speculative outdistances the practical, since the intellect is richer and more flexible than the will; hence we know more than we do. We understand the nature of the world better than we grasp the use to which the world should be put, and understand how to

conduct physical and chemical warfare better than how to end war. In this manner, a congress of intellectuals discussing science understand and agree with each other far better than the members of the League of Nations. Nevertheless, these two forms of philosophy, which may be called The Way of Knowing and The Way of Doing, are more interdependent than independent. One's practical attitude toward life is determined by his theoretical view of the world, while one's speculative view of nature tends to spring from his practical reaction upon the things of this world. "The kind of a philosophy which a man has," said Fichte, "depends upon what kind of a man he is," which might be reversed to say, "The kind of man that one is depends upon the kind of philosophy that one has."

If one looks upon the world as a system of ideas, he is likely to consider life as the realization of the ideal: if he tends to assume a favorable and noble attitude toward life, his "world" will probably be an orderly system of ideas. An absolutistic system like that of Plato will install the Good into both theory and practise. Epicurus will inject materialism into both thought and deed. Spinoza makes reason both the beginning of thought and the end of action. Schopenhauer sets up the Will-to-Live and determines his attitude toward life accordingly. It is possible for an

idealist to be a villain and a materialist a saint, but such characters are far from consistency.

The Way of Knowing

The theoretical division of philosophy is The Way of Knowing, and reveals itself frankly in the science of Logic. This science is in itself a formal study which is supposed to discipline the mind, promote good thinking, and prevent fallacy; but in a less direct manner it serves as the framework for philosophies which may find it convenient to inject a certain amount of physical and psychological material into the empty container of pure reason. Thus from the logical form of procedure comes a more robust and realistic body of doctrine known as ontology, or metaphysics, which seeks the principles of sheer logic in such elements as substance and attribute, or thing and quality, permanence and change, space and time. These might be called examples of stuffed logic. Now, this kind of speculative thinking becomes even more natural and realistic when it narrows its vision down to a consideration of immediate existence, where, in the form of a Philosophy of Nature, it proceeds to inquire whether the course of things generally is guided blindly by mere Mechanism or whether there is sufficient purpose manifest in the world to justify a philosophy of Finalism, or teleology. At the present time, this philosophy of nature is

centering its attention upon the question of Evolution, in connection with which the problems of Mechanism and Finalism become unusually acute.

The way in which speculative philosophy carries on its rational conquest of reality is expressed by means of various terms, which may be regarded as maxims or even trade-marks of systems. They are recognized as "Reason," "Ideas," "Categories," "First Principles," "The Absolute," and the like. All of these are examples of The Way of Knowing and may even be regarded as major premises in the argument which the philosopher desires to conduct. When they are of a looser and less logical form, these starting points of speculation, taken from physics and psychology, become "Matter" or "Mind," which make the work of philosophy easier to carry on and comprehend, but which do not thereby make it any better philosophy.

That which lies behind all this is the process of Thought, which consists in putting together the ideas which belong together. Our human ideas, which often arise in a purely circumstantial way, tend to follow the natural course of consciousness, which aims at immediate results of a practical character, with only a moderate regard for formal consistency. Philosophy observes the tendency of the mind to proceed upon a minimum of enlightenment, and realizes that

life would never have gone on if man had waited for full information about the world and perfect reasoning on the part of his mind; yet philosophy cannot admit that such haphazard methods as man has followed should be accepted as guides for the critical intellect.

Folk Philosophy

The natural train of ideas, whose nature is purely psychological, is guided by instinct and perception and held together by memory and habit. In response to this sort of "reasoning," which may be called animal cunning or common sense, man comes to various practical conclusions to the effect that water wets, fire burns, stones fall, metals sink, woods float, and the like. He reasons that the sun rises and sets, and that the various species of animal life are really as distinct throughout as they appear to be now that they are developed. This produces a sort of folk philosophy which still holds in most practical matters and still serves the majority of men on earth. But it is just this practical way of reasoning which philosophy finds necessary to criticize.

If the human mind were thoroughly adjusted to the world of its experience, it would not be necessary for philosophy to be so crabbed as to discriminate between the ideas which merely go together and those which truly belong together;

but as far as the human race has proceeded along the troubled stream of evolution it has not been able to experience the desired harmony between what seems to be and what really is, so that philosophy must keep drawing the perfect but imaginary lines of latitude and longitude around the rough globe of human experience, where the ideas which go together do not belong together and where the ideas which should associate are pathetically far apart. It does seem as tho the moon controlled the weather, since changes in the one accompany changes in the other; but even a minimum of reflection serves to show that there is no such arrangement in the world. It does not seem as tho the moon controlled the tides, but a careful consideration of the system of gravitation as far as it involves our solar system tends to substantiate this remote relationship. We must work our experience over and keep substituting for immediate impressions and casual connections the ideas of real objects in true relations. This is the primary work of Thought, on which, in the last analysis, all philosophy depends.

When Thought lays firm hold upon the world of concrete experience, it sets up a process of simplification which may well appal the lay mind, accustomed as this is to the richness and variety in the things of this world. This radical act of simplifying seems to impoverish the world

and reduce man to a strict mental diet. Reality seems luxurious in its forms and modes of behavior, hence how can philosophy hope to grasp its meaning and express its message when philosophy has but a few poor "categories" at its command? This impromptu question is answered in a way by considering both the parsimony of nature and the severity of the mind which seeks to interpret it. Nature uses the same elements again and again, while the mind sees the same factors in what appear to be new situations. Luxury and novelty may shine upon the surface of nature in her holiday apparel, but the critical mind sees through all that is so purely decorative and discerns the simple nature of that which really exists. Unlike the naïve ancients, we may not be able to reduce all reality to the elements of earth and air, fire and water, but the most thorough analysis of matter fails to reveal so many as a hundred different kinds, or atoms, and the number of these is likely to be made smaller as the analysis of matter is carried deeper. Indeed, it may turn out that all things are made of one stuff, and that this isn't a stuff at all.

The principle of simplification, which tends to make nature appear so formal and scholastic, appears again in the ways in which nature conducts her operations in a universe where so much seems to be going on at the same time, as tho

in a vast cosmic circus. The actual modes of behavior which matter follows are distressingly few in number at best, and the tendency is to simplify them, as Einstein seems to have done by placing mechanics and magnetism in a uniform field of force where the colorless principle of gravitation seems to be in complete control of the cosmic situation. In obedience to this impulse toward homogeneity, philosophy proceeds to dispose of the whole universe upon the basis of a single principle, like Substance or Causality, whereby all that exists and works is grasped by the intrepid advocate of pure intellectualism. Thus, the whole panorama of endless nature, as well as the majestic program which she carries out with infinite variety, is reduced rationally to a fundamental principle which the human mind conjures up as tho it were but to please its fancy.

The Way of Doing

Practical philosophy, or The Way of Doing, may not reveal the same degree of simplicity or render itself amenable to an equal degree of systematization; but even with the organic world, where life and growth, movement and consciousness are paramount, the unity cannot be wholly hidden. Even in the case of man himself, detached from the world so that he is free in his movements and versatile in his activ-

ities, a similar parsimony prevails. For the questions which man must ever ask himself are scarcely other than those of the Gentiles, or "What shall we eat and drink? Wherewithal shall we be housed and clothed?" What are the activities which invite the will save those of war and industry, of civilization and culture? And what are the inward motives which propel mankind toward his works but those of a desire for pleasure or a vague aspiration toward perfection? The varieties of human activity, as these appear in economics and ethics, are not sufficiently original or novel to enable the human will to stray beyond the general principles which philosophy so confidently lays down as final.

In various ways, practical philosophy follows the analogy of speculative thinking about the inorganic world in that it questions whether its fundamental principle is found in sense or reason and whether it is wiser for man to grasp at objects of immediate worth or press on toward those of more remote and refined value. When the practical side of philosophy is made to include esthetics and philosophy of history, the same noble narrowness prevails, for the considerations which control the situation are such as were known to Epicureans and Stoics centuries ago, if even then they were not old stories. Life as lived may appear astonishing and novel, since man is still a child in his activities; but

life as thought is a matter capable of almost complete simplification. Just as speculative philosophy lays down its fundamental principles as norms for thought, so practical philosophy lays dawn basic rules as guides for action. When ethics makes this attempt, it trims down the overgrown will to suitable size and convenient shape, as a tree is shorn of its broad branches.

Life is then made rational in the way that the world is found to be rational. Ordinarily one follows the paths of instinct or immediate impression; one responds to inclination or follows the lines of habit. He sees in pleasure an immediate benefit and takes the self to be the true terminus of his activities. But when philosophy lays hold of the will, as a rein upon a horse, it tends to substitute for these present benefits the permanent values of life as life is interpreted by thought. And when this exchange of values from the immediate to the remote is effected, man's life begins, and the human species distinguishes itself from the animal order whence it sprang. Thus does the drama of human life in its long and tortuous history adjust itself to a few unities which philosophy is not slow to determine.

Man a Valuing Animal

The grand divisions, then, are such as to yield Truths and Values. When philosophy is of the theoretical sort, man is regarded as the classic

homo sapiens, whose chief concern is the discovery of truth. Doubtless this passion for pure cognition in independence of all interest and prejudice has been exaggerated by admirers of philosophy and the exponents of science; but the search for true things and real relations between them must still be accredited to the creatures who, to-day, are regarded coarsely as constituting only one among various species of animal life as these have come into being by the general struggle for existence. Yet man is more than thinker, and his activities are other than those of his intellect. "Man is the valuing animal as such," in Nietzsche's phrase, and must be looked upon as a creature who seeks places where he may lay his hands as well as those where he may rest his gaze. To think and to act—such is the life of man, as philosophy views it. Undoubtedly these severe views of human life need to be softened and enhanced by concrete science and practical economics; but this is not to repudiate the sentiments of pure philosophy, which looks upon its hero as the creature whose chief concern is the validity of its ideas as these spring from the mind, and the value of the impulses issuing from the will.

But these details of specific thinking and useful action are not overlooked by philosophy when it lays down its fundamental principles of thought and final principles of action. That

which the philosophical mind desires to do is to draw about all these particulars and practicalities the circles which it draws when it deduces its universals. Philosophy excludes nothing, but includes everything. Is it so astounding, then, that philosophy, charmed and convinced by its own ideas, should open an abyss into which are plunged all kinds of matter and all forms of life, all movements in nature and all activities of mankind?

The Methods of Knowing

In most of our moods, we are in the habit of thinking that knowledge arrives at its object the way a bird flies to its nest. We see, we know and comprehend things well enough to carry on the average concerns of our lives. When it comes to larger notions of a theological or political character, we have either unwritten traditions or documents which seem to authorize the beliefs we entertain, and if these do not always work perfectly we feel that we are able to worry along somehow without any systematic philosophy. Hence we are inclined to feel perplexity and lose patience when philosophy approaches us with a theoretical program, all of whose important terms end with a suspicious "ism." We are persuaded that we can think as we do verily live without these annoying "isms."

Now, philosophy is convinced that, as we can-

not exercise the function of vision, which gives us brightness and color and enables us to see things, without the elaborate, delicate organ of the eye, so the knowing process cannot operate unless there is a fairly elaborate mechanism behind it. With a complicated scheme of sense-organs reenforced by the nervous system we may be able to feel our way about, especially as our animal nature is fitted out with instinctive arrangements which guide life toward the essential nature of things; but when we desire to come to an understanding with things so as to proceed consciously and carry out major enterprises in the world, we feel the need of organized knowledge. This knowledge is elaborated by science; the theory of it, whereby it is explained and its limits prescribed, appears in philosophy.

Old Ways and New

The theoretical formulations of knowledge, each of which is supposed to give a bird's-eye view of the intelligible field, are four in number: Rationalism and Empiricism, "Mysticism" and Pragmatism. They pair off about as indicated. Rationalism and Empiricism have long entertained a rivalry which may be called a cordial hatred, if it is understood that the cordiality in question has to do with their readiness to agree that some sort and degree of intellectualism is

desirable for good theory, and about as necessary for the interpretation of the objective order. "Mysticism," which must be written with quotation marks, and Pragmatism do not define themselves so well or adapt themselves so directly to their subject-matter; hence they are not so easily contrasted or mutually distinguished. Nevertheless, this latter pair may be described as being anti-intellectualistic methods of arriving at the same truths which so long have lured the elder theories of knowledge. They represent the philosophical theories of the twentieth century.

But if we were to be more liberal in our historical interpretations, we might be inclined to relegate Mysticism and Pragmatism to the very earliest period of human thought, for both are "new names for old ways of thinking." Undoubtedly the human mind looked into objects, events and experiences in an immediate way before it took up the process of analysis; and just as assuredly did it consider the consequences of thoughts, as well as acts, before it elaborated any principle of sufficient reason or logic of conclusions. But as far as philosophic theory is concerned, these ancient forms of thought are newcomers in the school of speculation. They were operative when thought was in its infancy; they appear again when thought seems to have overshot the mark and landed in a field of super-

sophistication. Originally offered as mental nourishment, they are now prescribed as cures. They have their place in the present system of knowledge, where they are of unusual value in emphasizing the need of a content to render knowledge natural and human. Furthermore, there are certain traits and tendencies in our contemporary life which can be expressed in no ways more suitable than those of Mysticism and Pragmatism.

But in spite of the advantages resulting from the application of mystical and pragmatic methods, it must be said that these theories can never stand alone the way Rationalism and Empiricism have done. They protest against some of the excesses of these modes, especially Rationalism; but if rationalist and empiricist were to remain silent, mystic and pragmatist would have nothing to say. The opinion just expressed may be clarified and fortified by the added assertion that, if these anti-intellectual theories had enjoyed a clear field from the beginning, they would have developed nothing or else a conception of the human mind which, assuming that it could be framed, would be wholly unintelligible to us to-day. We find fault with Plato and Aristotle, Spinoza and Kant; but if, instead of developing an intellectualistic conception of things, they had turned their minds toward these human but anti-intellectual modes

of mind, we should have to regard their writings as closed books. For this reason, it will be necessary to gain a clear and fairly comprehensive view of the older and more orthodox theories before we can enjoy the amiable distortions of the newer and more striking ones.

Near-Sighted and Far-Sighted

In spite of the fact that both Rationalism and Empiricism have always moved within the common field of intellectualism, they have differed sharply between themselves. Their exponents have assumed that it must be either Rationalism or Empiricism, an inward conception of the knowing process or one which placed its affair upon the world of things. This may be taken to mean that we arrive at knowledge by either conception or perception, and thus make use of an abstract idea here or a concrete fact there. If such a thing as knowledge may be represented in a vertical way, then Rationalism assumed that we arrived at truth by descending from the general to the particular, altho often it had difficulty in deciding just where this superior general idea had come from. On the other hand, if we incline toward Empiricism, we use the same line of procedure but attempt the ascent from the particular to the general.

If such a linear way of representing non-spatial things may further be tolerated, we may

ask whether knowledge appears at the fore end of the line in what is called an *a priori* way, or do we find it at the far end in an *a posteriori* position? This question of priority, which to the lay mind may seem as inconsequent as that of position of dignitaries at some social function, has always affected philosophers as a matter of unusual importance. But just as important is the question of the originality of knowledge, or whether the process of cognition, which is to give us our sciences, was direct or derivative, native or acquired? Did knowledge leap directly from the brain, as Minerva sprang full-armed from the head of Jove, or shall we say of it what was said of a less august character in literature, that it "just growed"?

The Unnatural Order of Events

When we consider how man creeps before he walks, and moves along first on roads then on steel tracks before he flies, we are prone to conclude that the empirical mode of thinking about our knowledge is the more plausible one. It is easy to perceive things, but not so simple to reason about them, just as walking on the feet is less difficult than walking on the hands; hence we are likely to believe that the slow and natural method of empiricism is more akin to man than the decisive and critical method of rationalism. If our philosophy were meant for Greek gods

who contemplate their world from the skies, the method of deductive rationalism might make its appeal; but since we are creatures of earth and to the manner born, ours, it seems, must be the way of reasoning from concrete particulars. Now, in the psychological order of every-day experience, this conclusion in favor of empiricism may be reasonable and just, but the actual development of knowledge in art, science, and philosophy is such as to throw the weight of evidence back upon the side of the more severe and superior conception of the knowing process.

General knowledge of a particular and practical sort is doubtless something picked up little by little in the course of experience, but organized knowledge seems to have come about in the opposite way. Knowledge, like charity, should begin at home; but knowledge in the strict sense of the term reveals a remote and foreign origin. The development of the fine arts exemplifies this general tendency to proceed from the large to the small—without, however, contributing anything convincing to the question under discussion. The esthetic tendency in the human mind expressed itself laboriously and ponderously in perfecting the art of architecture, whose earliest examples are those of a gigantic nature, as the Pyramids in Egypt. The passage from Oriental architecture to Grecian sculpture reveals the artistic spirit still dealing with solids, but working upon

smaller objects in the form of statues. Long after the development of such solid arts came the perfection of painting upon a flat surface in the spirit of representation, which may have represented as much beauty but far less in the way of problem and task. Finally came the art of music, which analyzed the tones that man had heard and produced from time immemorial. Does not art, then, create the impression of something like the deductive descent from the general to the particular?

Much more to the point, because of its purely intellectual nature, is the development of philosophy, which came upon the scene and in a way perfected itself deductively before the logic of induction was worked out in theory or applied in scientific procedure. If what may be called the natural course of events had prevailed, the Greeks, who were both skilful and thoughtful, should have worked out our science and we moderns should now be busy on their philosophy. They should have produced a Newton and Darwin, as might have been the case with their Archimedes and Empedocles, and we should have our Plato and Aristotle in the form of Einstein and Edison. But the actual order of thinking was the reverse of this, since we are busy with the particular and practical as they were absorbed by the general and cultural.

Knowledge Did Not Begin at Home

In the case of our natural sciences, we have a striking example of the descent from the remotely deductive to the immediate and particular, since the scientific mind has retreated from the most distant and alien region of the inorganic to the narrowed circle of life and consciousness. Let one imagine the course of culture under the auspices of common sense, and he would have man's mind devote itself to the human organism, thence to proceed to life generally, and after that turn his attention outward toward the earth to end his investigations with the far-off, useless stars. But the actual course of the sciences has been from astronomy to mechanics, from physics to chemistry, from chemistry to biology, and from the science of life to psychology. Our sciences have descended from heaven to earth; they placed deduction on the throne before they set induction to work. They have had their triumphs with alien matter which cannot be equaled by similar ones in allied life and mind. They have exemplified the paradox of philosophy to the effect that we are enlightened about things we do not experience, and ignorant of the things we really know. For we are at home in the distant land of things different from and antagonistic to man, and strangers in our own community of living things and

conscious minds. We can always foretell the future situation in the skies, but can never be certain what will be the weather in the region where we dwell.

Now the foregoing, which might seem to be an excessive exaltation of Rationalism, is really no more than an attempt to state justly the claims of that larger intellectualism of which Empiricism is an integral part. Now that there are in the field of knowledge what might be called "heterodox theories," it is well to emphasize the intellectual character of the knowing process, which apparently cannot be accepted as obvious. It will be almost as necessary to show that Rationalism and Empiricism satisfy the inward desires of the human spirit as to show that they meet the demands of the external order. If we may so speak, nature might be thought to be somewhat interested in the affairs of reason and experience, since they attempt to render her intelligible. But nature could not be thought of as being concerned with the fortunes of mystical or pragmatic modes. These are for the satisfaction of mankind in its more human and practical aspects.

The average work on philosophy, especially in the seventeenth and eighteenth centuries, was wont to be entitled an essay or treatise on the "human" understanding. Now, the concerns of humanity, which seem to make appeal to the

anti-intellectualist, appear to be met in such works, or such is the natural supposition. But the quality of humanity which is considered by the intellectualist is that of man thinking, or *homo sapiens*. He it is who is expected to be satisfied by clear ideas and cogent reasons. Such man is the creature who finds happiness in good thinking, as men are happy when they think correctly—*C'est le bonheur des hommes quand ils pensent juste.*

I

STANDARDIZED SYSTEMS

The Method of Rationalism

The term, "Rationalism," is often used to indicate some radical view of religion, as tho it were none other than free thought. But this is not the Rationalism of philosophy, which implies the supremacy of reason over sense, not the superiority of reason to faith. A "Rationalist" of the irreligious sort may be quite innocent of logical procedure, while a religious person may be quite adept in the use of logic, as in the case of the theologian. The Rationalist in the strict sense of the term may be regarded as the typical philosopher, since his deductive system has always been in the foreground of speculative thought, altho sense may still have some place and experience a part. This kind of Rationalism is easily identified in mathematics and logic and can be seen in the concrete sciences, like physics and chemistry, altho not quite so clearly. When thought encounters the sciences of biology, psychology and sociology, the severe lines of rationalistic procedure are relieved by the freehand drawing of the empirical mind. Rationalism itself is the Minervan type of think-

ing, since it springs full-armed from the brain. It is wisdom crying out and understanding putting forth her voice.

Knowledge by Reminiscence

The rationalism in which a confident philosophy so often rejoices may seem to rest upon "innate ideas" which are independent in their origin and intrinsic in their validity. These independent thought-units, like the axioms of geometry and laws of logic, appear to be self-evident in character and intuitive in form. They are supposed to equip us with a given stock of knowledge, so that our education in the world is fully facilitated by what we bring to its school. Let any one recall his painful experiences in learning certain truths of mathematics, as the multiplication table or the simpler propositions in geometry, and he will remember how, after the truth had been acquired, it seemed as tho the truth had been there all the time, so that studying seemed like a mental process of returning to the original source. It was a sentiment of this sort, elaborated on a large scale, which impelled Plato to conclude that knowledge was not the discovery of new things but the recollection of old ones, as these had been acquired in a previous state of existence. When we proceed rationalistically, we seem to

walk backwards with our faces toward the light which shines from behind.

Even in the sophisticated days of our science, particularly when we have Evolution in mind, it seems as tho we were using old truths which themselves have come down to us, not from any mythological state of preexistence, but from the less remote past of our ancestors. They acquired these truths by the pioneer contact with the coarse world, but we their children have come into their mental estate, which we need but keep up and extend. Or our logic is like our law in that it makes present decisions in the light of past precedents, for what has preceded in the experience of the race is our guide in dealing with present problems. Philosophy will naturally exult when it observes how its precious truths, instead of being confined to a narrow and uncertain present, are relegated to a past, be it mythological or ancestral; but it is not inclined to accept the history which truth may have had as a guarantee of its certainty.

Truth Is Like Eros

That which cheers philosophy in these theories of knowledge, which include the august past in the perceptions of the present, is the idea of elevation; for both mythology and evolution tend to lift our ideas out of the local and temporal situation in which we find and use them;

and, while we cannot wholly locate them in their strange home, we can rejoice in the realization that they are not limited to the immediate neighborhood of our every-day thinking. But what philosophy desires to do with its ideas is to deliver them from all special contact with space and time, and place them within a vast circle which our slender thought will touch at a tangent only and not try to embrace. Our lust for power may lead us to exercise dominion over earth, but we prefer to feel that the heaven of ideas is something which we cannot subdue, but which must forever arch over us with an authority all its own.

Naturally we wish to participate in the glory of these unearthly notions and have our place in the sun, but we would rather not have over these general notions the power we have over the things of this world in their concrete particularity. We want our ideas to be ours and not ours, here but everywhere, looked at in the present but surveyed under the form of eternity —*sub specie æternitatis,* as Spinoza expressed it. Our truth shall be like Eros, the oldest and youngest of the gods, for we shall view it as forever in the past but just as fully in the present. Such is the spirit of philosophy when it is interpreted by rationalism.

The whole course of philosophy is that of Rationalism, with occasional dips in the direction

of Empiricism and seasonable objections which are sure to be forthcoming from the exponents of experience. To review its history is to observe the peaks attained by the classic, scholastic, and rationalistic thinkers of the last twenty-five hundred years. Apparently little else was thought of than the supremacy of reason over sense until modern Rationalism as a professional doctrine encountered the competition of the Empirical school. The result of this competition, wherein the respective defenders of contrary faiths sought to dispute each other into defeat and themselves gain at least a verbal victory, was the conflict between the Rationalist and Empiricist of the seventeenth and eighteenth centuries. This was not decided until 1781, when Kant produced his *Critique of Pure Reason,* since which time the case has been appealed upon more than one significant occasion. It is customary to attribute the origin of such rationalism to Descartes, but it might be wiser to realize that Galileo was its real founder.

Descartes' Discovery

In the year 1633, when Descartes' thoughts were ripening into a condition of publication, he received the news of Galileo's conviction on Copernican grounds. Now, the work with which Descartes meant to inaugurate his philosophical system, *De Mundo,* had to do with that most dis-

agreeable of topics—the motion of the earth. Evidently Descartes, altho a soldier, had no desire to share the fate of Galileo, still less that of Bruno, who was burned at the stake in 1600; hence he abandoned his astronomical enterprise and contented his speculative instincts with his *Discourse on Method,* in which he discussed the manner rather than the matter of good thinking. Paradoxically enough, this published work had to do with skepticism, and the author, who feared to announce his rational belief in such a thing as motion, did not hesitate to indulge doubts about everything.

But the kind of doubt in which Descartes dabbled was of the most academic variety and had to do further with the private cogitations of his mind, hence there seemed to be nothing dangerous in such a species of skepticism. The French are used to it by this time, since, beginning with Montaigne and Descartes, they have had their Rousseau and Voltaire, their Comte and Taine, Renan and Anatole France, and now have Bergson as the latest acquisition to skeptical *dilettantisme.* Moreover, the kind of skepticism in which Descartes indulged was so easily checked by another kind of thought that one may regard the doubting process as a kind of intellectual inoculation instead of a downright disease. The whole process of rejecting and accepting lies in the hands of thought, and Des-

cartes was in perfect control of his process of cognition. The story of his skepticism has been told often in academic circles but should be noted anew here.

The classic language of this self-inflicted skepticism is as follows: "I will now close my eyes, I will stop my ears, I will turn away my senses from their objects, I will even efface from my consciousness all the images of corporeal things . . . and thus holding converse only with myself and closely examining my own nature, I will endeavor to obtain by degrees a more intimate and familiar knowledge of myself." Is this a metaphysician in doubt or a mystic at prayer? This sort of introspection, which was an old story in the Middle Ages and had worked most pictorially and effectively with St. Augustine, is now taken to be the starting point of our modern philosophy. The swift descent which Descartes made into his soul, as if to discover whether it was seaworthy or not, was immediately rewarded; for the act of doubt implies the act of thought, and he who thinks exists: *cogito, ergo sum!*

The Egoistic Eureka

This Eureka of modern philosophy is as charming as that of ancient physics; both are supposed to contain the specific essences of their respective subject-matters. By means of

this psychological act, mind was separated from matter and the problem of psycho-physical relationship set up to annoy Spinoza and Leibnitz in their day, to confuse us in ours. Yet how adolescent was the skepticism of this Gallic genius when it could think of shutting out the knowable world of nature merely by closing the eyes and stopping up the ears! And how equally naïve to accept the idea of God which he had just doubted simply because introspection reveals this idea immediately after it has disclosed the inherent sense of selfhood! Just as unsophisticated was it for Descartes to return to his original belief in the world of things because of the notion that the Deity who gives him his cosmic impressions was "no deceiver."

That which concerns philosophy at this point is the Cartesian mode of arriving at the idea of selfhood. If we credit Descartes, we shall be inclined to think that the self is easy to find and the world difficult to discover, when most of our experiences and reflections have brought us to the very opposite conclusion. The things of this world are ever with us in their solid, stubborn exteriority, and it is only now and then, in what Dostoievsky calls the "special, sudden moment," that we get so much as a glimpse of the self in the form of a gentle glow which is immediately engulfed in the glare of physical objects. And even when we do find

a flicker of self-consciousness, its fugitive character is such that we hesitate to base upon it any belief in a soul, for the kind of *cogito* which we enjoy so occasionally does not convey any accompanying *sum*.

But the self of Descartes' rational psychology made its appeal to his school, among whose members, so tradition says, was a group of egoistic enthusiasts who went as far as solipsism, or belief that the self is the sole object of existence. History has not yet revealed just who composed the solipsistic circle, and when, if ever, their names are brought to light, philosophy will have to consider how there could be a group of solipsists any more than there could be a congregation of hermits or a flock of hermit thrushes. Even Kant was impressed by the importance of Descartes' psychology and went out of his way to show that the proposition, "I think," itself acceptable enough, cannot be used in such a transitive way as to carry over to an "I am." Impressed was Kant, indeed, and so deeply that, in attempting to determine how much such psychology implies, he was so inadvertent as to grant that it proved an "I am"; whereupon his English translator rushed to his rescue and stated, as Max Müller did in the second edition of his version, that in this place in the *Critique* Kant's *ich bin* really means an "I think."

The Cartesian *cogito* would not be so bad in

itself as a bit of psychology, or as the basis of "Soliloquies" and "Confessions" like St. Augustine's, but the psychological principle of Descartes is supposed to be the basis of a deductive system which follows a geometrical method out into a mechanistic scheme of philosophy. A "Self" of some sort, like that of Kant or Fichte, might be able to bear such a weight, but not the tiny, introspective self of Descartes. For it is necessary to think about something, an object or an idea, and not surrender the inner life to mere awareness or pure cogitation. It is true that Descartes entertained the idea of God, which, in the form of a Creator or World Ground, Absolute or Highest Good, can afford abundant material for reflection; but even here, when he was imitating the medieval Anselm of Canterbury, he did not think of any definitive notion of Deity but only of his inward impression of Deity. Hence Descartes, with his flexible psychology, establishes only the belief in God; the theological idea of God, which Anselm sought in his ontological proof, escapes his inward system of private sentiments.

The Leviathan on a Hook

Canst thou draw out the Leviathan with a hook? Could Descartes deduce from his norm of self-observation any such system of Theism or Mechanism as his philosophy appears to prom-

ise? Could he pass from the personal axioms of psychology to the axioms of pure, colorless and impersonal geometry? Yet that is exactly what he attempted to do, for he was charmed alike by the simplicity with which he could move about within the cool recesses of his own soul and the ease with which he could proceed through geometrical space and press on, as tho coursing through the air, to certain demonstrations. That which resulted from the pursuit of the geometrical method was a severe system of mechanics which laid hold of practically all existence and reduced it to automatism. All that was saved from this juggernaut was the soul of man, which escapes, as it were, by the skin of its teeth by being a conscious automaton.

What Descartes discovered within himself was thus something of a dual character; it consisted in both the psychological and the physical, for it had to do with the axioms of both the self and space. He went from one to the other as a traveler goes from sea to land, and gave the impression that his journey was not broken, but that the spirit of consistency marked his complete passage. But to review this original system of modern rationalism is to feel that there is some measure of contradiction between the personal and mechanistic. What he might have done is a different story, and doubtless an idle tale. He might have more fully glorified and as deeply

developed the concept of consciousness, which he had apprehended when he discovered himself and the self. This was a promising principle, since it yielded further the idea of God as a super-consciousness, and might have been developed intuitively something after the manner of Bergson. But Descartes was too fully impressed by the possibilities of mathematics and too thoroughly drawn in the direction of modern mechanics to indulge in the ideals of mysticism when the principles of mechanism held out such promises; hence he chose the mechanistic way of reasoning and maintained the conscious self as no more than a symbol. By means of its intrinsic consciousness, the self was saved from the system of mechanism, but even in its privileged position it had to undergo a kind of rationalization to make it something like the exterior order, and it is just this rationalistic discipline which Descartes takes up in his severe treatise on *The Passions of the Soul.*

Primogeniture in Philosophy

Now it was the notion of the "innate" by means of which Descartes inaugurated the rationalism which he did not so thoroughly found. His service was less logical than chronological. When he referred to an inborn principle as the source of his philosophic authority, he seemed to be employing the idea of right by primogeni-

ture instead of reason and justice. Hence rationalism could not find itself until it had decided upon a fundamental principle of a different sort, which involved a change from psychology to logic. This basis was adopted when philosophy introduced the idea of the *a priori,* a conception far more difficult to handle than that of innateness, but all the more plausible and satisfactory. Nevertheless, the two conceptions have something in common in that both alike are opposed to the idea of letting time have much of a voice in the matter of deciding the questions of truth. Herein is found a severe lesson for our thought, which is so confident about modern science and so conceited about recent scientific achievement that it believes in the eternity of the present. The past doesn't count, for all its ages were either dark or nebulous ones, but at last we have emerged into the clear light of truth.

But philosophy, altho it does not care to stress any historical conceptions of past and present, is determined that we shall see things in the light of larger views, however dim, rather than in the glare of the present; hence philosophy must insist that the source of light is as stationary as the sun in the solar system. The movement in the case is a local affair of the earth. In this spirit, philosophy insists upon the priority of ideas, a coming before in order

of excellence if not in the sequence of time. But if for the moment we continue to use the idea of priority in a temporal manner, we may suggest that our ideas in mathematics and logic are prior to our exact knowledge about them in concrete experience. The perception of this it was which led Plato to use the myth of pre-existence. The importance of this it was which induced the Schoolmen to think of universal ideas as prior to particular things, as *universale ante rem.* Actually we come to know and have dealings with these universals of number, being, cause and the like, after we have seen them embodied in or exemplified by the things of this world, as *universale post rem;* but in spite of this fact of experience philosophy keeps on insisting that that which came after really was before. Now, it is not so much priority to experience, but independence of it, which philosophy is insisting upon.

Before and After in Thought

The temporal idea of priority to experience, which might better mean the primacy over experience, comes into full view but not fully clear form in the rationalistic doctrine of the *a priori.* According to rationalism, there are truths which are known and judgments which can be formed prior to and independent of any experience with the objects which they involve.

This supreme doctrine of the rationalistic school has enjoyed various forms of statement which have had to do with the explanation of the *a priori,* not with the justification of it as a form of reasoning. According to Plato, the essence of the *a priori,* as has been noted, may be understood by dating back the origin of an idea to the remote past of man's preexistence. The chief value of this poetical notion was to take the truths in question of the present, where experience is dominant. In the Scholastic mind, the *a priori* signified the knowledge from causes rather than effects, which, again, dates the *a priori* back to some prior period. But these two conceptions of the *a priori,* so remote from logical thinking, have little to offer those who today desire to discover just how this magisterial doctrine is to be understood and accepted.

In the Transcendentalism of Kant and the Realism of contemporary thought, the problem of the *a priori* resolves itself into the question whether this principle is to be located subjectively within the mind itself or objectively in an external order of some sort. But both agree in affiliating the mind more or less closely with a principle of knowledge which seems to bestow the sublimity of a Greek god, so that all of us, in spite of our evolutionary ancestry, are really descendants of Apollo, the very god of intellect. In the case of Kant, himself an Olym-

pian figure in philosophy, this deification of the human understanding is unusually clear and emphatic. For, according to this master transcendentalist, it is by virtue of the very nature of the mind that man comes into possession, or even himself forms, these supreme principles of rational thinking.

Our modern Realism, which witnessed the development of a strident naturalism of which Kant was unaware, is willing to preserve the *a priori,* but not so ready to attribute its validity to the idea that man's thought about it is the basis of that validity. The realist is inclined, so it seems, to look upon the Kantian *a priori* as something akin to the Platonistic in the sense that both of them tend to attribute too much importance to the part which the human mind plays in the doctrine. According to Realism, *a priori* propositions signify relations between universals without these relations being either mental or material. When this view is held, man himself loses somewhat of the dignity which he inherited from Plato and Kant, but he may perhaps console himself with the thought that the *a priori* still abides as something independent of mere experience. For it is elevated above the existential order of time and space and located in a transcendental realm where its purity and certainty are preserved.

But just what does the *a priori* mean for

thought and how may it be illustrated? To speak of it as something independent of time and space is to tell what it is not; what it is has yet to be shown. Now, the *a priori* is non-spatial in the sense that it is universal; non-temporal because it is necessary. Mathematical *a prioris* hold good in all places and at all times; that is, they have nothing whatsoever to do with what is local and temporary. Twice two are four, not only here and now, but everywhere and at all times; not only on earth, where we human inhabitants discover and apply this typical truth, but on the planet Mars, if it have inhabitants with an arithmetic, and on all the planets whether there are mathematicians there or not. Make the sum of these twos anything else, like three or five, and both reason and reality balk. But what examples of the universal and necessary are in the proud possession of the human mind?

How Thought Anticipates

In explaining the meaning of the *a priori,* we have already exemplified it, if only in the particular case of the mathematical. Here are found the greatest number and the best illustrations of those universal and necessary truths which lift themselves out of space and time, and which exist, or obtain, in a celestial realm of their own. If, for a moment, we allow the empirical

to put in a protest and advance the claims of the *a posteriori* or opposite method of calculating, the *a priori* may stand out more clearly and appeal more convincingly. The *a posteriori,* to speak of it in that way, will insist that the simple equation in mathematics is something with which the mind was not originally furnished, else there would be no need of education, since the individual could let the *a prioris* issue forth from his mind as shafts of light from a flame. How much more plausible seems this objection when one considers the more difficult equations and theorems of higher mathematics! Are these to be had for the asking, and do we mortals bathe in truth as in the sunlight of the skies?

The rationalist, or *a priorist,* as we might call him, admits the point of this plausible objection but considers it a matter of pedagogy rather than of philosophy. It is not the manner but the matter; not how we come to know our *a priori* mathematics, but what they are like once we have counted on our fingers, used an abacus, written numbers on paper, or used some other helpful device. We may have to be convinced within ourselves, but the proposition in question does not have to be proved. As a matter of fact, now that we have performed this simple problem countless times, we are no more fully convinced of its truth than we were at

the beginning. We do not say, "It has been shown that when two couples are put together the result is a quadruple," for a truth of this sort need not be "shown" at all. Just how we know or recognize the truthfulness of the twice-two-four situation, whether by intuition or otherwise, is another question; but the fact remains that we accept it as something above and below all empirical proof.

The Rope-Stretchers of the Nile

When we advance from the intangible realm of number to the more perceptible realm of geometry, it seems as tho we had still to shake off the spatiality of which the *a priori* is supposed to be independent, since a geometrical truth is apparently more "real" as it is more pictorial and earthly. Suppose we consider the "Pythagorean Theorem," which is recognized as a proposition to the effect that the square on the hypotenuse of a right triangle is equal to the sum of the squares on the other two sides. This gives an equation like that of twice two are four, but altho it is more vivid it does not appear as simple and *a priori*. Now, the tradition in the matter is that Pythagoras came upon the truth which bears his name by observing the work of Egyptian "rope-stretchers," or surveyors, who operated with a rope twelve units long subdivided into units of three, four and five. When

this rope was made into a crude figure, it was found to form a triangle with the five-side balancing, as it were, the three and four.

But Pythagoras went farther than the rope-stretchers, who had observed the sheer triangularity of the figure; Pythagoras observed that the five-side was able to maintain itself, so to speak, against the other two, whose sum was so much greater, even when all three of the sides were squared. What he saw was that 3 square plus 4 square is equal to 5 square, as 9 plus 16 equals 25. When these three numbers were doubled, trebled, quadrupled and so on, the same relation between lesser sides and the larger one was steadily maintained. Pythagoras had stumbled upon something, but that something was gold. He was in a position to demonstrate where at first he had only observed. What he proved was not something about existing triangles made of rope or any other material, but something about triangularity in the pure space of geometry. The theorem was applicable to real objects in physical space, but was demonstrable with thought-of objects in ideal space.

Once this proposition was proved by Pythagoras, it was true for all time and all places, since it held of itself in a way remote from the actual world, "the painful kingdom of time and place where dwell care and canker and fear," as Emerson expressed it. The fact that Euclid

re-demonstrated the principle of the rope-stretchers and made it a proposition in his work on geometry, and the further fact that from the days of Pythagoras geometers have corroborated the truth about the triangle, has nothing whatsoever to do with the truth in question.

When modern science demonstrated that heat was not a calorific fluid but a mode of motion, it was forced to proceed in a different fashion. Count Rumford, in 1798, produced friction by boring a cannon in a box containing water and discovered that cold water could thus be raised to the boiling point, which suggested that heat came from motion. Then Sir Humphry Davy made this theory more conclusive by producing heat from ice by means of friction. The climax of the theory was reached still later when Joule made the experiment a matter of measurement by showing that the amount of energy which went into the operation was equaled by the amount of heat which came out. The theory was then regarded as demonstrated, altho it would be a bold scientist who would say that we have the last word on the subject of heat, since the future may produce a conception which will render the kinetic theory as obsolete as the old caloric one. The theorem of the triangle is in no such condition as the theory of heat.

Three Kinds of Space

The validity of classic mathematics as founded by Pythagoras and Euclid is not impugned by the discovery or development of other systems, usually spoken of as non-Euclidean and non-Pythagorean. Such systems of geometry have been developed by Riemann and Lobachevsky, who have assumed new axioms and arrived at new theorems. The same may be said of the non-Pythagorean algebra of Hamilton and Boole, who have made self-consistent systems out of paradoxical assumptions. But these paradoxical and perplexing systems do not run counter to but parallel with classic mathematics, as an airplane flies along above the tracks over which the train moves more laboriously. In attempting to come to an understanding with these novel systems, the lay mind may well indulge in two forms of reflection, one empirical, the other rationalistic. On the empirical side, where common sense refuses to depart from its habitual notions, the lay mind may protest that these new systems of mathematics do not apply to the world of our experience but depart most abruptly from the laws of existence. They are meant obviously for those who insist upon taking an extremely unearthly point of view. If one holds to such paradoxes, one must abandon experience when he thinks.

But this, which seems like a defeat for the common-sense mind, may be accepted as a victory for the rationalistic one, since it strengthens the *a priori* notion that truth abides in a vast and supernal realm whose lights are seen by mortals as mere shadows. The lay mind, which despairs of attaining to such superiority of thought, may admire what it cannot itself work out, in the way that the lay mind in esthetics may enjoy taste for the superior work of art which the genius has created. Look upon these Riemanns and Lobachevskis as only Angelos and Shakespeares, and they will but enhance our faith in the supremacy of the creative spirit in mankind. We do not belong in their class, but they are members of our general order of mankind, and while they defy our common sense and defeat our common calculations, the very distortions in which they indulge tend to thrill the mind by their performances. Daring indeed was Pythagoras when he deduced immortal consequences from the humble work of the Egyptian rope-stretchers, but far more daring is the enterprise of these super-mathematicians in comparison with whose transcendental flights the work of common mortals is as insignificant as that of rope-stretchers from the Nile.

If mathematics has convinced us of the *a priori*, and that all too thoroughly, will the same independence of experience carry over un-

tainted into the more concrete realm of mechanics? Can things as well as thoughts be regarded as *a priori?* The triumphant principle rules over equations, but may not be as mighty over laws. The question resolves itself into one of geometry. The ease with which the mind adapts itself to geometry has just been shown in the way the followers of Pythagoras set up their omniscient axioms and drew their infallible deductions. Does nature geometrize in the same way and does inert matter justify its occupancy of space by realizing the exquisite forms of extension? If this or something like it is not the case, it is difficult to understand how Pythagoras could have gone from triangles of rope to the pure triangularity of the mind and then returned to apply his theorem to matter generally. Now, it is in just this geometrical manner that science sees the skies, and as ancient mythology traced among the stars the shapes of unearthly demons, modern mathematics draws the pure lines of geometry. And it is upon the assumption of the *a priori* in the celestial order that astronomy has scored its victories and made its triumphant predictions.

The Romance of Rationalism

The most popular example of such deductive reasoning about matter appears in the discovery of the planet Neptune, which might be called

"The Romance of Rationalism." When, in 1781, Sir William Herschel discovered the planet Uranus moving about the solar system, it was determined that its orbit was not such as it should be in connection with the gravitational force of the sun and the other planets then known. The general assumption was then made that some other and unknown planet must be drawing Uranus from its proper path. In 1843, the orbit of Uranus was calculated more closely in order to discover the position of the planet which was drawing Uranus out of its celestial course. This position was determined, and the unknown planet would have been found if the astronomer had looked for it. When, in 1864, the calculations were made again and the observation added to them, the planet Neptune was discovered in almost the place the mathematician had marked upon his paper. Here is an instance of pure deduction availing itself of the *a priori* to leap up out of the order of space and time and fall back again upon its feet.

The discovery of missing chemical elements by means of theoretical calculation affords an additional example of the way the *a priori* has its place in the laboratory alongside of the test-tube. After Mendelieff had arranged the known elements in a table which seemed suitable to the theoretical ideals of a scientist, he discovered that his arrangement suffered here and there

from gaps which the known elements could not fill. Pure theory had places for them and had furnished them with the physical and chemical properties which they would possess when brought to light. In the course of time, empirical investigations revealed most of these dreamed-of things, altho two of them are still to be found. Now, if matter were not as mathematical as mind, and if nature herself were not infused with the *a priori*, such triumphs of deduction would be impossible; the very thought of them would seem like the wild dreams of astrologer and alchemist.

But planets and chemical elements are only special things in the whole universe, so that it remains to be considered whether general principles which obtain there are of the same mathematical character and amenable to the *a priori* reasoning of pure mathematics. The most universal principle of the universe is that of gravitation, altho it must be said that at the present time, with the new relationship between gravity and magnetism, we are not in a position to speak so confidently of Newton's principle. Nevertheless, we are in possession of a principle which is universal in its scope, imperative in its action and instantaneous in its behavior. We observe its influence when we see a falling body and feel it when we move about; but this is not to reason about it. To think of gravitation after

its own manner, is to reason that it operates directly as to mass but inversely as the square of the objects mutually attracted. Now it is this formula—something far different from that of the twice-two-four one—which makes us wonder if gravitation is as necessary in its form as it is universal in its scope. Might it not have operated directly as the distance or may there not be sections of the remoter universe where our gravitation operates according to another formula, as an alien land which uses a foreign language?

This is a question which the physicist must answer in his own way. All that philosophy can do is to suggest that in the formula of gravitation we have the example of a general principle, or that of "attenuation by diffusion," whereby a force of almost any sort needs to diminish when it covers a greater area. Within a narrow circle about a flame, the illumination is intense; but it grows less so the broader the circle. Within the immediate range of a bell, the sound is loud but grows fainter the farther its waves extend. Hence the theorizing intellect, which is no master of mathematical mechanics, would suggest, however timidly, that the operations of gravitation are such as to gratify the expectations of the mind and follow such a course of rationality as to be spoken of as having

the same *a priori* character of pure mathematics.

Mathematics and mechanics in their stolid, cosmic character might well be expected to evince sheer rationality, since it is only by being orderly that the mathematical can hold and the mechanical operate. When, however, the issue is that of the logical and ethical, which bear the distinct stamp of man's mind and will, the case of rationalism may be lost. Like mathematics, logic is pure and formal, and the neater its forms, the farther removed is it from the rugged nature of the real. Like mechanics, ethics is energistic and somewhat empirical, but its dependence upon the human will makes it far less stable and reliable as a way of thinking.

Logical Intuition

The quest of the universal and necessary in logic is immediately rewarded, altho the results are likely to be hollow and in vain. The very basis of formal logic is The Principle of Identity, which signifies that "Whatever is, is," or that A is A. There can be no doubt as to the universal and necessary validity of this first principle, altho there may be practical scruples against its utility. But, in defense of such formalism, philosophy is swift to state that Identity is of value in a protective and prohibitive way, since it keeps us from identifying

things that are so different as to have their natures contradict each other. With the validity of the principle beyond all possible dispute, we may consider the value which it has for correct thinking. The principle, or law of thought, may be invoked and applied to those who would assert that "God is nature," "Mind is matter" "Morality is sociality," or who would reason in such a way as to produce such interesting confusions.

Undoubtedly there are difficulties in the way of this self-evident principle of thought, and these are encountered not only in concrete science, which tends to embarrass the mind with the riches of its results, but in abstract logic, which desires to pass onward from identical concepts to judgments which seem to connect if not identify things that are different. The things which we come to know have a way of gliding into each other without much regard for the wall which identity would set up between them. This is true especially when one considers his subject-matter under the auspices of evolution, which is famous for the way in which it makes diverse realms overlap to such a degree that the individual identities are lost to view. But in spite of this conjunctive tendency among the objects of our knowledge, they have still a way of emphasizing at the core of their being the identity which is lost to view on the edges, so

that we can still distinguish animal from plant and man from ape. The Principle of Identity is like a monarch who maintains his throne but who does not have his subjects under perfect control.

Moral Certainty

When the moral nature of man comes in for a hearing before the supreme court of the *a priori,* the case does not seem so clear. For now it is man, detached from the mechanical order, independent in part from animal instinct, and meandering about under the influence of a will which is free to move but not so perfect as to rejoice in the realization of rationality. The maddest meteor, the rankest weed, or the wildest beast in its own way exhibits more downright rationality than man at his best state of culture and civilization. It is true that man is in possession of reason, but the application of this superb principle, as he makes it, is more scientific than humanistic; for man tends ever to direct it outward toward the comprehension of other things rather than to turn it inward for the cultivation of his own spirit. May we hope, then, to observe with satisfaction the display on the part of our own species of that *a priori* principle or rationality which has been found in the processes of nature and the forms of thought?

The answer to this critical question may be found in the statement that, at the bottom of man's moral nature, there is a solidity in which the ethical *a priori* may be discovered. This appears in the form of an implicit judgment, or inward persuasion of the Good. No matter what man may do or how he may feel, he judges immediately that the good is better than the bad, just as he decides by a sort of intuition that happiness is preferable to misery. We can scarcely believe that the human race set forth in a spirit of neutrality—as to goodness and happiness—and then applied the principle of trial-and-error to determine which was the better course to follow. Still less can we think that the race divided into two groups, the one to try the happy good, the other the miserable bad, as Abraham followed his right hand toward Canaan while Lot chose the sinister path toward Sodom. No; for unless we assume an immediate principle and an intrinsic standard, we shall have in the future no way of discriminating between the desirable and undesirable.

If we have trouble in believing that man's fantastic will lays down fundamental principles of morality, it is because we consider man in the heat of action instead of the coolness of his intellectual nature. His mood may be such as to engender a diabolism, whence he will say, "Evil, be thou my good." His decadent tem-

perament, when it lays hold upon him, may incline him esthetically to exalt misery and morbidness above happiness and health. But these frames of mind, more emotional than intellectual, still recognize the ideal of perfection from which they are departing. They represent man as saying, "For the good that I would I do not, but the evil which I would not, that I do." Or, as Pagan wisdom expressed it, "I see the better way and approve of it, but 'tis the worse I follow." We have no need of being convinced that man, selfish, sensuous, and warlike, tends to follow the way of the worse; but even this implies an instinctive recognition of the better. It points backwards pathetically to the good that was seen and approved, and encourages reason to assert, or postulate, an immediate good as a permanent possession of the mind, as a sort of ethical *a priori*.

The Self-Evident in Politics and Theology

When we continue the thin path of pure rationality, and thus pass from the moral to the political, it is still possible to believe that civilization involves a suggestion of the *a priori*, which is seen so clearly in mathematics and logic, even when the beginnings of such political activity, as St. Augustine pointed out, witness a connection between city-building and fratricide. For after Cain had slain Abel, he built

the city of Enoch, as Romulus killed Remus and then founded the city of Rome. If we may reduce the whole of the political arrangement to a principle of rights, we can then understand how the monarchical mind asserts the divine right of kings, altho a radical might suggest that the royal right is divine only in the sense that it is not earthly and human. If we take the standpoint of democracy, we see in Magna Cartas, Bills of Rights, and Declarations of Independence a direct appeal to some immediate principle so persuasive as to forbid any sort of induction from particular cases or deductions from higher principles. This appears with much emphasis, but perhaps not with as much thought, in our American document, which so relies upon the political *a priori* as to say, "We hold it to be self-evident that God hath created all men free and equal." This may be taken as a sort of Jeffersonian gesture or revolutionary fling on the part of our forefathers generally, but the mood which dictated their Declaration was one which had been brewing in the brain ever since, in 1625, Grotius blundered upon the rights of war and peace and called it a deduction.

Now, if there is such a thing as a political *a priori,* it is just as possible that there is a theological one, since the idea of God should be as fundamental as that of man. Theology, in

calling upon reason to substantiate its instinctive belief in the Deepest and Highest, has elaborated a series of theistic demonstrations which lead back, at last, to the thought that the being of God, as Anselm of Canterbury insisted, is found in the very idea of Deity. Plato had taught him that ideals are reals, hence he concluded that the highest ideal is the most real of all. Furthermore, since the idea of God cannot be proved conclusively from anything in rugged nature or even in the smoother universe of philosophy and science, it will have to be demonstrated by itself and take its place among —or perhaps beneath—these other *a prioris* as the most *a priori* of them all. With all of them, as they emerge from below, almost volcanically, into the human mind, the tendency of man is to accept them as he accepts things generally, despairing of any further demonstration. For when man makes the descent into the depths of his own spirit, and comes upon such things as Identity, Gravitation, Goodness, Rights, and Godhead, he can only conclude that, as far as he is concerned, he has struck the self-evident, intuitive *a priori*. There he rests the case of rationalism.

The Method of Empiricism

The term, "Empiricism," conveys most of the meaning which philosophy finds in it, but does

not suggest the structure or provoke the problems which such a way of thinking is bound to engender in time. Since we live empirically, with sense as our atmosphere and experience as our guide, we are in immediate touch with a kind of rough-and-ready empiricism, which guides us when calculations miss fire and theories come awry. Indeed, we are like amphibious beasts which have ventured out upon the dry land of the *a priori,* but which are glad ever and anon to return to the original habitat of water, there to be supported and enveloped by a medium to whose soft manner we feel born. Reason is a sort of firmament above, whence we take our reckonings now and then, but experience is the mundane sphere in which we live, act, and try to reason. We are of the earth earthy and empirical.

Experience as Teacher

When, however, we attempt to construct a logical organum out of what is so agreeable to sheer life and action, we find that the thick world of experienced facts is not as illuminating as the dim and distant world of thoughts; for in its opaqueness, the world of experience makes a poor mirror for the mind. If, then, it is thinking which engages us and knowledge which leads us on, we must inquire to what extent, or with what degree of certainty, this pillar

of cloud by day can afford a guide comparable with the pillar of fire by night. Even life itself, when we try to render its moral, political and social aspects clear and convincing, may require us to amend our human experience; but all the more likely is it that the more rigorous process of thought will find us attempting some leap or flight in the direction of ideas when we seek a view of man and nature as wholes or philosophical universals. Now, just what does "Empiricism" really mean, or how are we to understand our human experience as such?

The preliminary attempt to define or even describe empiricism will reveal a paradox acceptable to the philosophic mind but disconcerting to those who are not adept at dialectics. It is that we date the conceptions of our own experience, not from experience itself, but from the opposite or rationalistic point of view; just as the Copernican astronomer determines the position of the earth in the skies by assuming the remote standpoint of a star, the sun. Like the artist, we see the landscape better when we turn the head upside down and look at the world through our legs; or like the traveler, we understand our own country for the first time when we see it from abroad. When this practical paradox of the reversed view is applied directly to the examination of empiricism, it will appear that the empiricist spends most of his time and effort

protesting against and passing criticism upon the extraordinary views so gaily assumed by his friendly enemy, the rationalist. Now, as a critic who curbs the spirit of pure speculation, the empiricist has shown his right to exist. As a faithful hound which dogs our steps and makes us aware of something out of the way, he has long since demonstrated his value as a companion for venturesome speculation.

If philosophy had followed the staid course of common sense, it would have witnessed man setting his own house in order before attempting anything of wider range and more ambitious character. But philosophic thinking is ever an extraordinary procedure on the part of the mind, so that its history shows a thoroughly developed rationalism before any empiricism was dreamed of. It is true that, among the ancients who were charmed with Ideas, one finds a Democritus setting up a world of physical atoms in contrast with Plato's world of spiritual entities; but both of these orders, however different in themselves, were equally distant from a world of experience. Epicurus, too, as tho weary of dialectics, sought to exalt matter as the supreme principle; but he lacked the physical and psychological paraphernalia necessary to place materiality upon a sound basis. There was science in those days, since Pythagoras made calculations and Archimedes performed experi-

ments; but the empirical conception of things generally was still to emerge from the consciousness of mankind.

The Two Bacons

Dare we look to the Schoolmen for the foundation of empiricism when they were dominated by the dialectics of Paganism and the dogmas of Christianity? Probably not, and yet the great cathedral builders must have felt that the brain could produce something more than quiddities, and that theoretical plans could find due exemplification in material forms. Before the end of the scholastic period was reached or the beginning of the modern one found, Roger Bacon, *Doctor Mirabilis,* had devoted his life to scientific investigations whereby he was enabled to enrich the growing knowledge of the natural order. Hence, if one were to weigh the importance of the medieval Bacon with that of the modern one, the balance would needs fall into the thirteenth rather than into the seventeenth century, for the scholastic thinker wrote down in ancient Latin what the modern one discussed in such eloquent English. However, it is the modern period, inaugurated by definite discoveries, which is the empirical one par excellence. It is here, too, that empiricism, which is of democratic cast, was made practical by the new art of printing.

Francis Bacon, who enjoys such a gorgeous reputation for modernness, may be credited with empirical philosophy but hardly with empirical science. His spirit was essentially that of the Renaissance, since it celebrated the return to nature more than it conducted any researches into its special fields. The pathetic lack of stolid modernness appears in Bacon's rejection of Copernican astronomy, his refusal to apply mathematics to physical problems, the necessity of which had been appreciated by Roger Bacon, as also his blindness to the possibilities of Natural Rights and Natural Religion, which were so influential from his day on to the end of the eighteenth century. Bacon wrote essays which reveal remarkable insight into human nature, but was quite perplexed when it came to the problem of bubbles. Hence, we can best do justice to him by saying that he advertised the scientific commodities which he himself was unable to produce. Doubtless he stimulated research, but were he alive to-day he would feel less at home in the scientific order which he seemed to initiate than in the scholastic one which he impugned.

But Science Came Down From the Skies

The empirical era of the factual and practical was not as swift to appear as Bacon and his followers might have wished. This was not due

to any lack of exact knowledge which an empiricist might reflect upon, since the concrete period of human thought was now well under way. The new heavens had appeared, for Tycho Brahe had placed the sun at the center of the planetary system, altho he was not ready to displace the earth from its strategic position. Copernicus had gone farther, for he had made the earth but one planet among others and had adopted the apparently absurd idea that the earth was in motion. The great astronomic revolution had thus been accomplished, altho the result was hardly of an empirical character. It remained for Kepler to determine the form of the planetary orbits and to discover the laws of their motion. Galileo carried out the propaganda of the new system, but he did more than that. He laid down the principles of motion and made our modern science possible. Now the empirical part of all this is to be found in Galileo's telescope and inclined plane. He looked up into the heavens and saw the satellites of Jupiter, and with his inclined plane brought modern science down from heaven to earth, as Bergson expresses it.

But all of this, so important for the founding of empirical science, has to do with the physical order. The relation of man to his new world was another matter, and one which had to be taken up psychologically by the orthodox empiricists

of the modern period. How blind they were to physical truths and how all too keen to psychological ones! For the writings of Locke, Berkeley and Hume are fully decorated with such psychological terms as sensation, impression, idea, reflection, memory, and the like, but not in any wise marked by the terminology of physics. Indeed, it was because of their devotion to the immediate experience of sensation that these naïve empiricists shut themselves off from any sort of intellectual relationship with matter and motion, whose qualities were such as to keep outside the narrow range of such psychological experience. If, then, philosophy did not have a standardized rationalism to give shape to the contrast, the empirical side of the debate would lack color if not body.

Locke's Empirical Essay

But the empirical habit of being more contra-reason than pro-experience makes it possible for philosophy to round out a suitable doctrine which may be called the empirical one. In most instances, as will appear at once, the leading ideas of the empiricist are privative and protesting, and the exponent of the theory seems like a fowler who would cage the eagle and release a more domestic bird. The first step taken was to cleanse the mind of what Locke called "innate ideas," which would have a truer ring of logic

about them if they were styled *a priori*. In this biological spirit, Locke protested that an examination of pure, undisciplined mind, as this appears in child, idiot and savage, fails to reveal the presence of that which plays its part in mathematics and mechanics, or in philosophy and science generally. In defense of Locke, it may be said that he allowed himself to be misled by the *Meditations* of Descartes, who did indulge psychology quite freely when he sought the real objects of his belief, but who regained his balance when he developed mathematical and mechanical considerations.

The privative psychology of Locke convinced him that there was nothing in the intellect which was not first in sense, so that it is to sensation one must look for the origin of human ideas. Once the mind is stocked with impressions from the senses, it may reflect upon these and elaborate general notions which will compare, in a way, with the universals of rationalism. Space and time as such come from the sensation of place and period; finite and infinite from the general sense of quantity. Substance then amounts to nothing more than an aggregate of simple impressions, causality to a more complete relation of little connections which we perceived between things. Universals themselves are but names for large and loose ideas which the mind

itself formulates from its own sensational acquisitions.

There is, however, far more to the logic of empiricism than this reference to the work of the original empiricist would imply. The rationalist knows this full well and has no desire himself to develop a theoretical doctrine which shall bear likeness to nothing in earth beneath or heaven above. This is the reason why we find him seeking the warm universals of mechanics and morals, and looking for them, however wistfully, even in politics and theology, rather than to confine them to the symbolic forms of the mathematical and logical. What the rationalist seeks in experience is content, the embodying exemplification of his ideas, the enhancement of his universals, which he would find in things themselves and not in the thoughts of the mind only. It was in full view of this concrete need that Kant declared, "Thoughts without contents are empty," just as it was a craving for content that urged him on in quest of the mental desiderata he was forever proclaiming, or "synthetic judgments."

How Experience Provokes

When the rationalist in all his apparent unearthliness keeps harping on the *a priori,* he is not blind to the fact that it is experience which ever presents the situation in which, as gold in

the ore, the previous *a priori* is found. Nor is he oblivious of the further fact that, like the "rope-stretchers" of Pythagoras or the bath of Archimedes, or even the mythical apple of Newton, a touch of experience is necessary to bring forth the *a priori* principle. The rationalist sees, likewise, that some of his great deductive triumphs were achieved, not by the commanding officers in the field, but by the common soldiers of the empirical order. In the classic case of the discovery of Neptune, the mathematical astronomer had already at his command a rich fund of empirical data, and even after his calculations had been made so cogently as to work out coherently, he aspired actually to see the result with his eyes. In the parallel instance of Mendelieff's Periodic Law, it was not merely a systematic arrangement of the elements then known, but the discovery of missing ones, which constituted the result, if not the purpose, of the calculation. And thus is rationalistic wisdom justified of its empirical children.

Experience may be called the termini of knowledge, since it is with the empirical that knowledge has its source and end. Between these two there is a lofty loop which must satisfy the rationalist's desire for flight into the empyrean of the *a priori*. The naturalistic source of a rationalistic idea is not a logical but an anthropological situation and a pathetic reminder that

man is but a finite creature who, altho "something akin to the sea and the sky, is a creature of earth after all." But the science of geometry is not balked by the reminder that man's perception of space began crudely with eye and hand. Astronomy and chemistry are not tainted because of their respective origins in astrology and alchemy. Religion is not less admirable and binding because of the suggestion that it may have arisen from animal dread. Still less is the whole matter of thinking rendered relative by the theory that, in the experience of mankind, thought has been the mere servant of action. For the psychological source of an idea, however interesting, does not contain its ground or the empirical course of a notion lead to a logical conclusion. The mind must creep before it walks, but once upon its feet it strides about in such a way as to obliterate the memory of earlier efforts. Knowledge may remain for a long time in an embryonic condition, but at last it breaks its shell and moves about independently in the world which produced it.

Applied Experience

The application, or more general relationship, to the rich order of reality, which rational knowledge ever feels, is a more impressive argument for empiricism than anything about its circumstantial source in sense can begin to sug-

gest. Here experience bulks large. For here we find the extensive and elaborate field of science which makes up our known world. The record of this is simply encyclopedic, and when rationalism takes hold of it, the intellectual operations of pure reason resemble the work of surveyors who scan what they do not fully grasp and place thin chains around a vast and fruitful field which they themselves do not possess. When the philosopher recalls the work of his Platos and Kants, it must seem to him as tho, in his ardor for the *a priori,* he has been trying to cook the hare before catching it. Or the simple net which he dropped into the sea has brought up all manner of fishes, so that the net might seem to break. He may discourse most learnedly, as some Plato in his academy or an Aristotle walking about, arms folded, with his disciples; he may lecture so formally, as a Kant or Hegel at the *Universität;* but the kind of knowledge which is to engage the mind and encompass the world springs in luxuriant wildness outside the walled gardens of these somber speculators. Ideals, syllogisms, categories, absolutes and the like are lost to view in a real and knowable world where the laws of the mind are all the more the laws of things and where the natural syllogisms rush from the intellect to seek wider, richer fields in the logic of reality.

The nature of the experience which makes

the *a priori* appear so pale by contrast includes both the concrete and the useful. It can be perceived and laid hold of. It may puzzle the pure intellect, but it permits the senses and the will to read nature like a book. Truth need not be surmised in idealistic dreams, or thought out to theoretical conclusions: it can be found as a continent which looms up after a long voyage of discovery. Pure theory may have gone on before and reported its discovery of the new land, but it seems as tho the little ships of rationalism had done no more than discover little isles of being, lying off the long coasts of the real continent of truth. How absurd seems the procedure of the rationalist when, as logician, he assumes the universal mortality of man, and then concludes the mortality of Socrates long after history has recorded the actual death of the man who originally made such reasoning possible! And how much more forceful and fruitful to observe a definite fact, advance a plausible hypothesis, and then with an array of similar facts perfect a theory! Now, this is just the spirit of enlightened empiricism, which prefers description to definition and concrete cognition to abstract reasoning.

The Use of Experience

On the practical, or volitional, side of its procedure, empiricism further endears itself to the

modern mind by returning from the natural order, into which it had advanced so robustly, laden with practical results, as the twelve spies, whom Moses sent over into the Promised Land in the time of the first ripe grapes, came back with a cluster so huge that they bore it between two upon a staff. The practical yield of scientific empiricism is such as to beguile the brain away from the fruitless deductions of metaphysics, since here, in the domain of applied science, are appreciable results of apprehended facts, and these seem to create a new heaven and a new earth of those industrial appliances which minister to the every comfort and convenience of mankind. Philosophy, which cannot bake bread, is outdone by science, which creates mechanisms to satisfy our every earthly need in ways which are so fully felt and habitually expected that no detailed description of them is possible.

But the course of empiricism, all marked by its triumphs in the realm of the particular and practical, has been as heedless in its methods as it was happy in its results. The empiricist may be likened to a plunger in the stock market, who piles up profits only as he borrows for his buyings, and who at last must submit to an accounting, which may show that he is not so rich after all. There can be little doubt that empiricism has been a huge borrower from rationalism and, sooner or later, must acknowledge its

indebtedness. When this accounting is made, it will appear that empiricism is not wholly empirical, if it may be put that way, but is a doctrine whose basic principles, general forms, and final conclusions are of a rationalistic character. The way for modern experience had been prepared, its course marked out, and the general cast of its conclusions anticipated by a theory of knowledge which it ever sought to set aside. It might seem as tho the rich harvest of the concrete and useful had dropped as ripe fruit from the Tree of Knowledge into the empty baskets of the modern fruit gatherers; but a little reflection will show that knowledge, far from being a windfall, is something which has been brought about by long cultivation; for rationalism has labored and empiricism has entered into the fruit of its labors. An examination of the elements which form experience and the factors which control it will reveal its quasi-rational character.

Experience Is Human

First of all, it must be said that experience is something enjoyed by man. As long as we dwell upon the sensuous nature of the empirical and dilate upon its practical applications, we shall be inclined to look upon human experience as a mental arrangement which man shares with the higher animals. In them we find the perception

of the particular; in them the instinctive application of what is thus sensed. In the brain of man and beast alike, while they are struggling for existence, we find a direct application to the salient qualities of things as far as these are able to satisfy physical wants. We find, further, in both alike a primitive tendency to use the objects of perception as means to a practical end; the web of the spider and the beaver's dam here, the tools and weapons of the savage there, are examples of practical mentality, which, however, is innocent of thought and experience alike. The animal has its habits, the primitive and even practical mind of to-day has its lore; but habit and lore are far removed from that definitely organized and distinctly intellectualized thing which we have learned to recognize as human experience. For out of this comes a science which is strikingly absent in mere human cognition, as it is not to be thought of in connection with the animal mind. It is this scientific experience with which philosophy has to do.

The rational character of experience will appear further when it is pointed out that the empirical way of regarding the world is exemplified by the trained human mind. When the human mind in its raw condition sets up relations with nature, it may acquire certain useful forms of observation, a practical rule of action and a set of traditional judgments about things

generally; but this wisdom of the world, however adroit in its procedure and admirable in its form, is not to be taken as the kind of experience which science employs in its investigations, any more than it can be accepted as the empirical theory which philosophy introduces into the problem of knowledge. An experienced woodsman can be of great value to a botanist but cannot afford him real aid in his scientific work. A practical worker among men may give suggestions to the social thinker but must step back when the latter really goes to work. For experience is not something which man in his lowest mental state may have for the asking; it is an intellectual benefit which only man at his best is able to appreciate.

What Are the Facts?

The humanistic and intellectual character of experience appears the moment we consider it in the light of Observation. The act of observation which lights upon the fact might seem to involve no more than the mere presence of somebody's mind in the region of the desired datum; but we know perfectly well that scientific data are not discovered in the way that a number of people of all sorts look for a needed object or some missing thing. Observation, in the scientific sense of that term, involves the right sort of person looking for the right sort of thing. The

astronomer, thoroughly trained in the ways of the skies and fully equipped in his observatory, sees the star which is hidden from mortal gaze. The botanist who has come to an understanding with the flora of the region discerns the plant which the layman treads under foot. When it is a question of relations between things, the physicist finds heat in friction in a way that escaped the observation of the savage even when he knew how to produce fire by rubbing two sticks together. "Facts," which seem such obvious things, are really data which are not as prominent as common sense imagines. A thousand and one things may pass before the eyes before the one which is new and significant is discovered.

Observation is not obvious. On the side of the object, it must be realized that nature is not outlining her laws the way courses are stated in a college curriculum; nor does she set forth her scientific goods as tho it were her aim to advertise. Nature may not love to hide, but she has in mind, if one may so speak, gigantic transactions, so that she cannot take time to explain her methods to the human mind. Colors, odors, and flavors are qualities which nature impresses upon consciousness, but these attributes of things give us little idea of their nature. The pleasant and unpleasant effects which objects have upon us, so that we entertain desire or aversion for them, are still other impressions which common

nature impresses upon the common mind; but we cannot make headway in science by listing our human desiderata. Indeed, when science began to take shape, it was found expedient to take all such salient qualities of things perceived, as Galileo did, and set them aside in the rather ignominious realm of the "secondary qualities." Unfortunately for common observation, these secondary qualities are forever standing in the light of the "primary" ones.

The inherent difficulty of observing the data out of which experience is to be fashioned is accompanied by perceptual looseness on the part of the would-be observer. Practical realism would say, "Paint what you see, record what you observe, say what you think." But in the confusion of the landscape, in the panorama of the world and the stream of consciousness, just what does one see or observe or think? If there is to be observation which counts, the mind must be sharpened to the proper point, so that it knows what it is looking for; and this must be some sort of rationalistic purpose, or guiding notion. It is only the geologist who really sees the stone or the astronomer the star or the botanist the plant. The rest of us do but gaze blindly upon the thing in question as one among others in the whole display. This might seem to exalt unduly the rationalist's principle of deducing the particular from the general, but it means

only that the deductive state of mind is all but necessary in fixing attention upon what is to be a fact, a datum, a point in the interpretation of nature. Thus it is reported of Charles Darwin, who might be esteemed a pure observer of plants and animals, "that he often said that no one could be a good observer unless he was an active theorizer."

The rationalist who defines his topics in an abstract manner is much more at ease than the empiricist who describes his data in a realistic way. For the shut-in mind of the *a priori* thinker does not encounter the confusions in nature and consciousness which tend to distort pure observation. To meet this difficulty the empirical thinker resorts to the semi-abstractionism of experiment, wherein a portion of nature is isolated and the process of thinking narrowed so that crucial cases can be created and distinct observation made. Experiment, moreover, leads to measurement; and what is science when it cannot state its case according to the metric system? Once the empiricist has arrived at the definite observation of the given, he is ready to realize those principles of real observation with which his broad system of philosophy really begins.

What are we to think, then, of the empirical expectations which are supposed to realize themselves when consciousness reaches out with the

hope of grasping the utter realities of the world? Even the simple act of "getting at the facts" has turned out to be a difficult task of identifying data, so that human experience would seem to be a discipline more severe than speculation and perhaps as scholastic as rationalism itself. Experience when understood and not merely talked about is a complicated matter of connection and coordination, of criticism and arrangement, and even the preliminary effort to isolate its elements, as these punctuate the empirical discourse, has shown how sophisticated the empiricist really is. His is a choice theory, not a crude one; his a conception of knowledge so selective as to be aristocratic in its bearing. It was he, was it not? who promised to deliver us from the dungeon of Scholasticism; but now we realize that we shall by no means come out thence till we have paid the uttermost farthing.

What's the Connection?

The character of our human experience becomes more complicated when we realize that we must pass on from the observed facts to their real relations. We may put them together as they come together or let fancy arrange them in some romantic way, but we shall not get knowledge thereby. No, we must sever the casual connections which appear in every-day life and

cut asunder the cords with which custom may have connected them. Then, having differentiated them in the conditions where they were found, reassemble them according to a pattern which appeals to reason as suitable and cogent. Now, that which forms the fiber of this tough experience is the principle of causality, and "happy is he who can cognize the causes of things."

The reconstruction of nature according to a rational and recognized principle requires method. If nature were an illuminated cosmos and man possessed a transparent consciousness, the purification of the two would be unnecessary. But nature does not merely pose for the mind, nor does the mind devote itself unreservedly to truth-gathering. Hence the knowledge situation, which empiricism seeks to clear up by means of observation and explanation, comes to be recognized as something different from what one finds in a studio or laboratory. Studio lights and laboratory methods must be arranged in something analogous to the *a priori* system of rationalism. Bacon recommended this, but it remained for John Stuart Mill, more than two centuries later, to regulate empiricism by means of inductive logic. Mill did this by means of Methods, not categories or ideas or syllogisms. His were the Method of Agreement, Method of Difference, and three other methodological

schemes brought about by combinations and adaptations of these. They were meant to detect nature in the act of causal connection.

The Use of Methods

The Method of Agreement is calculated to grasp the crucial circumstance and draw it out of a confusing mass of phenomena. Of course, nature ever runs true to form, but she carries an elaborate entourage along her causal avenues. Hence, this inductive method is meant to deliver the human mind from irrelevance rather than to cure nature of her prodigality. Doubtless all of nature's phenomena follow some method of agreement, whatever it may be, so that the method in question is meant for man, and is more psychological than physical. An academic illustration of Agreement will serve to set the matter in clear light.

In the case of color, one is inclined to believe that this effect is due, after the manner of pigments, to the nature of the substance which reveals the tints. With mother-of-pearl, it seems as tho the delicate iridescence were caused by the gross nature of the shell. But Sir David Brewster took an impression of this in such alien substances as beeswax and balsam, gum-arabic and lead, only to discover the same sort of coloring. These "colored" substances differed widely in their material make-up, but agreed, as far as

this particular experiment was concerned, in their form. Hence it was the form which had to be accepted as the cause of color in the case. Any one who has observed something like rainbow effects in petroleum and tar has at least marveled at the phenomena, altho he may not have known how to explain it according to any Method of Agreement.

Experimental investigations of a more valuable nature, as these were made in connection with the phenomenon of heat, have the effect of making the method more impressive. When Count Rumford produced unlimited heat by boring a cannon in cool water, he believed that the heat was due to friction rather than any sort of "caloric" substance. When Sir Humphry Davy procured heat from ice by rubbing cakes of this unpromising material together in a vacuum, the frictional cause of the phenomenon was further corroborated. And when J. P. Joule drew out in the new form of heat the equivalent of the amount of energy he had put into his experiment, the notion that it was not the matter involved but the manner in which it was operated which gave the cause was practically substantiated.

In the human order, which bears but faint analogy to the stolid natural one, this same method of reasoning seems to apply in such a way that we can control causes as far as they are

involved in the life of individuals and of society. Let any one who suffers from indigestion muse upon his diet, tracing it through its variations from meal to meal and from day to day. If, along with a variety of other foods, his menu shows the consistent use of coffee, he is not slow, altho perhaps reluctant, to conclude, something after the manner of a certain advertisement, that "There's a reason." Coffee is the cause of the indigestional phenomenon in his private laboratory. Doubtless this method of reasoning, even in the elaborate form of The Joint Method of Agreement and Difference, has been used by mankind ever since primitive man discovered the art of fire. But when the method is ensconced in professional empiricism and stated in the broad outline of abstract language, it seems more impressive and appears to illustrate the way in which knowledge becomes power.

The Experiment of Prohibition

In the larger order of congregated individuals, the Method of Agreement, which always conveys the opposite Method of Difference, may be observed in the case of American Prohibition, which President Hoover has styled "a noble experiment." The inductive argument herein is as follows: If we have such a constant institution as the saloon along with all sorts of people, different kinds of occupation, schools of different

ranks, efficient or inefficient police, vigorous or lax courts, active or inactive churches, censored or uncensored books and plays, Republicans or Democrats in control, and various other phases of a nation's life distributed over the forty-eight states, we conclude that the social disorder with which we are all too familiar is traceable to the one invariable thing mentioned. This is the Method of Agreement under a wet régime.

If, now, we abolish the saloon and still have the same sort of people with their usual occupations, the same schools, police departments, courts, books, plays, parties and the like, and then have social order with none of the poverty, distress and crime of the saloon era, it is reasonable to suppose that the presence of the saloon made for the bad as its absence makes for the good. Naturally, there are difficulties in the way of conducting Mill's Methods on such a gigantic scale, with such a heterogeneous population, and under imperfect conditions. The wet era did not affect all who lived under its auspices; the dry one is similarly ineffective in touching all who are included in it. Yet, there is doubtless a tendency of wetness to mean badness, of dryness to mean goodness, altho a person with no taste for inductive reasoning and seeing with only half an eye might protest that this conclusion might have been drawn deductively from

the very nature of the case apart from the statistical inductions which are employed by those who want to place such "Matters of Course" upon a philosophical basis.

Where Induction Lags

Furthermore, the popular practical mind, which is mildly interested in inductive canons, may wonder why it is that these methods have not succeeded in locating causes in cases of the most conspicuous of our human ills. There are plenty of instances of crime here and obedience to law there; of cancer and non-cancer; of war and peace. Why, then, do some of the population persist in violence; why do so many suffer from this dread malady; and why do the nations of the earth still make war? Is it that induction cannot succeed in isolating its crucial cases because it hasn't observed long enough or with sufficient care? Is it that the human situation is too unstable to permit logic to apply principles which are so fruitful in the realm of stars and molecules? Or is it rather that the inductive empiricist, in his disdain for deductive reasoning, which often is only glorified common sense, has taken too much upon his shoulders and should allow the claims of pure reasoning to be put forth more fully?

It must appear by this time that the business of getting at the facts and finding the reasons

is something so serious that experience, which started at a low level of logic, must be elevated still higher if it is to become an acceptable way of thinking. When one confines his reflections to phenomena like color and heat, and even when he lengthens his logic to include such remote topics as earth and sun, he is privileged to feel that he is carrying on an intellectual commerce with an empirical order all his own. But when his quasi-empirical plan is supposed to include a star which ceased to exist hundreds of years ago altho its light is still seen as if it were "there," he may feel that the quality of experience is unduly strained and may long to treat such topic in a less concrete manner. When, further, one tries to "experience" an existent star whose light for all its speed cannot wholly cope with cosmic space and has still to arrive, the tension on the empirical may appear still more intense.

Likewise with the microscopic elements of the physical world which elude the naked eye and finally escape from the magnifying lenses: dare we speak of these molecules and atoms and electrons as objects of experience? May we suggest in defense of our local theory that, had we better eyes and better lenses, we should observe these invisibles? or that the superman of the remote future, with a superscience in keeping with his superiority, will see what is hidden from

us here and now? On the contrary, the empiricist finds it more convenient to extend his doctrine than to strain the sense-factors which constitute it. Thus he substitutes for the "experienced" the "experiencable," and changes from an actual experience to a possible one, which is conceived after the analogy of it. The practical empiric dares not do this, for he cannot navigate when his ship is "out of sight of land." Indeed, he cannot swim when the water is "over his head." This, however, can be done by the scientific empiricist, altho the extension of his program will bring him nearer than ever to the realm of the rationalist.

Now, the size of things is not altogether significant when once we have those things themselves, for we can tell what space is without telling how large it may be. In the case of the ultra-universe, which seems to betray a greater galaxy beyond the one we experience, we can reason by analogy that, after all, this super-celestial order is only a greater range of what we have already experienced. And when we are confronted by the question of the infra-corpuscular order in their mysterious character and behavior, we may conclude similarly that this innermost world is only a continuation downwards of the granular system with which we are better acquainted. Certainly, neither the macroscopic order beyond nor the microscopic

realm beneath gives any indication of having different qualities from the more usual things which we experience, so that we may speak of galaxies and electrons as being the objects of a possible experience. And even more certain is it that no one, following science upward to excessive heights and downward toward unwonted depths, would expect to come upon God as the largest of all things experienced, or the soul as the finest of all things discerned. No, for God and soul are of a different sort and are not supposed to become the objects of quasi-sensuous apprehension.

Architect and Builder

The field of experience, with its observable facts and assignable relations, is thoroughly legitimate, so that we have a right to reason in the region of the concrete as well as in the domain of the abstract. But the kind of reasoning which the empiricist employs may not be so well authenticated. Master of his content, as he is, he may not be so mighty with form, just as the skilful builder is not necessarily a good architect. Now, it is the architecture of experience which affords no little trouble to him who forever persists in following the half-resisting lines of perceived facts. Empiricism is eminently a theory of the present. It finds that facts are as they are and that relations between things

which obtain here are just as constant elsewhere. But will the future reveal this admirable constancy of things in which empiricism now rejoices? When such a futuristic question comes up, it is answered simply and sincerely upon the basis of The Uniformity of Nature.

In practical life, we make of The Uniformity of Nature a matter of habit and are inclined to agree with Hume when he said, "Custom, then, is the great guide of human life." Of human life where there are many things to do and not so many to be thought, and where habit is so magisterial, yes, indeed; but this is a philosophical question, and what is philosophy if not a demonstrable affair, a matter of certainty? In the religious life, we are inclined to relegate this question of future consistency on the part of nature to the fidelity of the Divine Being and thus trust that the to-morrows still to come will be in line generally with the dependable yesterdays. But, altho we may have to betake ourselves to faith when it comes to proofs of futures, we have still to see what reasoning can bring forth when this problem of a persistent uniformity among natural processes is turned over to it. And here we find that the temporal character of professional empiricism makes a solution dubious.

Popular empiricism, which breaks away from practise long enough to theorize a bit, will in-

sist that the proof of a Uniformity competent to cover the far-flung future is found in what has already been experienced. We have mastered the alphabet of nature as far as a, b, c are concerned, and have thus established an alphabetical order of things. It was in accordance with such uniformity that the sun rose, rose, rose, and the same uniformity extended along a straight line will account for future sunrises. For such instances of events as empiricism can enumerate have done more than merely indicate separate happenings; they have revealed a principle upon which they themselves depend. But a little reflection will show that this sort of extended reasoning, by assuming what it is expected to prove, simply begs the question and leaves us where we were, except that our observed facts have shown a likely tendency to uniformity.

The professional empiricism of Mill is no more successful in its attempt at logic than was this practical method of prognosticating uniformity. According to Mill, the futures which once were became so many presents of an empirical sort and are now on record as futures overcome. The same will be true of the futures yet unexperienced, for they, too, will take their place among the acquired or overcome futurities. Yet this way of reasoning, for all its plausibility and optimism, is guilty of reasoning in the same cir-

cle, since it has to assume upon the very basis of uniformity that future futures will turn out to be like past futures. The principle of Uniformity, sensed generally and applied loosely, allows one to reason securely about particular things in their local connections, but will not permit itself to be proved by any such inductive procedure. When it comes to a question of proof, the empiricist must retire from the field having achieved a moral victory in the form of a high degree of probability.

Man the Master of Experience

It is evident that certainty cannot be squeezed out of experience unless one lay firm hands upon it. One must be its master, not its slave. He must treat it, with all its complicated vastness, as an idea in his mind and have it partake of the deductive qualities which its position there will involve. When the subject of experience was introduced, it was pointed out that the empirical is no ordinary form of reasoning in which the common mind, still less animal instinct, participates; but a way of reasoning superior in character and rigorous in form. This has appeared in the course of the analysis wherein actual experience has had to yield to possible experience, and possibility is something which belongs to the realm of pure thought rather than that of mere experience. From this point

of view, experience is an ideal still to be realized; a way of thinking which must be defined in a non-empirical way. Man is in the world, works in the world, and speculates about it; but man has not experienced the world and in all probability never will.

As soon as it has been recognized that The Uniformity of Nature is not the subject of any possible experience, it will be appreciated that other forms of the empirical process are just as far removed from the sensuous realm in which they are found. That grasp of the world which both science and philosophy seek to exert is not to be made by soft hands but by more sinewy members, for the rigorous forms of reality, especially as these appear in mechanics, demand strong reception on the part of the mind. There must be necessary preparation for the conquest which knowledge would conduct, and that preliminary can be found in reason only. Or, to drop these figurative modes of expression, the geometrical character of the universe requires geometrical apprehension on the part of the would-be knower.

The very region in which the world is found, or that of time and space, is one which experience may be able to touch and appreciate in a general way; but the comprehension of these temporal and spatial forms is a matter which must be taken up by the deductive intellect.

If nature were at heart as pictorial as she seems, the empirical way of interpreting her forms would be sufficient. But nature, as we have come to know her, is a severe order, the form of which demands rigor on the part of the knowing mind. Cast in a mathematical mold and carrying on her operations mechanically, the natural order is to be understood only as the mind utilizes suitable methods. Now, these are not the methods of empiricism, for, granting for the sake of avoiding argument, that experience knows the world, it cannot be said that experience knows itself. That knowledge must come from some higher source.

Experience Outdoes Itself

The extra-empirical character of experience is found in thought which is famous for its universal and necessary connections. Will this seem over-idealistic in mood or dogmatic in tone? Will this appear to take nature, after it has been worked over and perfected by science, and deliver it into the hands of that dread dialectics from which it effected its escape? Must we who have luxuriated in glad principles of scientism return to the grim forms of rationalism? As long as the thinker indulges a polemical spirit, just so long will he feel that the rationalistic appropriation of experience is a form of theft, as tho science were the fruitful vineyard which

was seized by Naboth because it lay near his palace. But when scientific empiricism comes to the sound realization that the problem of the world is too much for mere empiricism, it will welcome the aid which comes to it from philosophy, as a weaker nation opens its gates to the regency of a stronger one.

But the rationalizing of experience need not be carried to the extremes of Transcendentalism, as tho Kant were in the right when he first laid down the principles of pure thought through the logical judgments of the understanding and then made experience fit into the rigid framework of reason. For that makes of reason a Procrustean bed into which the sleeper must be fitted by cutting him down or stretching him out. No, it is rather that reason is the plan which experience is to realize, the trellis on which its vines may grow. It is more appropriate for the mind to rule experience than to obey it; and the pure calculations of the mathematician, the ideal experiments of the physicist and chemist, and the genetic procedure of the biologist are just so many illustrations of the way in which the mind takes hold of its experience with nature to make it heed the behests of thought. Nature is a most material witness, but her testimony cannot become evidence until she has been cross-examined by reason.

The responsibilities of reason must not be over-

looked in the present situation, where the rational regency over the objects of experience is more like a limited monarchy than a tyranny. These rational obligations may not have been fully realized by Plato, who was inclined to transcend the world of actual moving things all too freely and attempt a return to nature all too fantastically. The place of reason within the world of things was not appreciated by this classic idealist, who was so fond of likening the natural situation of the mind to that of a benighted mortal in a shadowy cave. No, for the mind of man makes its appearance and grows up within the world which gradually becomes an object of clearer and clearer knowledge. Now, whether the mind finds rational entities and necessary relations in the world or frames them itself and then, as it were, forces them upon the world is a question which cannot be taken up appropriately or fruitfully until we come to the discussion of Idealism and Realism. For the time, we may rest in the conviction that knowledge, while not derived from experience, is yet devoted to experience and is knowledge in the genuine sense of the term; that is, the *a priori* of rationalism, which means only that philosophy deals with universals.

II

IRRATIONAL SCHEMES

An anti-intellectualistic conception of the world appears at first to involve a logical contradiction and psychological impossibility. We have a general prejudice to the effect that our knowledge comes to us along the straight and narrow way of thinking, hence we cannot place ourselves in a position or get ourselves in a mood where we can appreciate the possibility of a "thoughtless" way of getting at truth. This general presumption in favor of knowing by thinking is made specific and scholastic by the standard theories of knowledge. Rationalism insists upon arriving at truth by a proper procedure, which consists in drawing deductions from general principles. Empiricism may appear to be animated by a more natural method, but it, too, bases its claims upon similar general principles, only it goes at these more slowly and builds them up more painfully. In this manner, both common sense and common logic seem to put blinders upon the eyes so that we can see only straight ahead.

The Departure From Dogmatism

Now, our century attempts to depart from this dogmatism. It entertains a more liberal con-

ception of the cognitive process and proposes to use "mind" in a fuller, freer way. The consciousness that was consisted of mental units, or the sensations which could be identified, classified and even enumerated in so many thousands and tens of thousands. These might seem to afford sufficient scope for thinking, but the rich array of mental elements could not atone for the fact that living connectives between them were lacking and that the vitality and activity of the mind were practically ignored. The mind has now overflowed the narrow banks which the older psychology built up about it. The field of consciousness has been enriched by observations in the quarters of both the normal and abnormal. Its processes have taken on life by means of the applied psychology which set about using what the science of the nineteenth century had only recorded; hence we have a psychology of most of our human enterprises, as education, religion, business, industry, and the like. A word like "psychology," which is on almost everybody's tongue, has come to mean more than was ever dreamed of in the analytical psychology of the last generation.

In addition to the natural expansion of the conscious field, we have psychological systems which further carry us away from the prim neighborhood of a consciousness which was delineated in such a self-conscious way, by inward

observation or introspection. The Behaviorist seeks to make our consciousness more effective by treating it as a physical mechanism which runs so well of itself that it doesn't reveal any special sensations or require any supervising consciousness. The Psychoanalyst does something like this when he draws common consciousness into the unconscious and thus imposes upon it his mental mechanism. Where the psychologist does not employ these extreme measures, he departs from the analytical, atomic method of getting at the mind by treating it in the form of patterns. Now, all of these tendencies have drawn philosophy away from the trim and trite conceptions which led to Rationalism and Empiricism, but have invited the less logical conceptions which appear in Mysticism and Pragmatism.

The Revolt Against Reason

The intimate analysis of Mysticism and Pragmatism, which constitute the anti-intellectualistic method of arriving at truth, will reveal specific differences between their aims and results. But such an analytical procedure cannot well be taken up until the spirit which they share has been interpreted. They agree and differ and agree to differ; but what is philosophy when it cannot debate and draw distinctions? In the apparently unusual case of anti-intellectualism,

we must ask whether the propagandists of Pragmatism and Mysticism have merely taken advantage of some special situation in philosophy, as political radicals avail themselves of popular dissatisfaction or social confusion to advance their revolutionary cause, or whether there is something in human nature itself which puts forth systematically what these novel movements express specifically. Is man intellectual or anti-intellectual in his nature? Has the intellectual development of the race been a sham which our century has revealed, a mask torn off, a theory exploded? Shall man consider the way in which nature has given his brain the capacity for cognition and then allowed the race to build up a system of culture only to say, at last, "Oh, knowledge! I have followed thee, and found thee but a shade"?

In reviewing the intellectual history of the race, it is inescapable and undeniable that man, once he has attained a certain intellectual elevation, tends to repudiate the efforts of his mind and effect a return to something more natural, congenial, and promising. When culture was in its infancy, man may well have felt a certain nostalgia for nature, which, in our age, is not so credible or sincere. For we humans have taken or had thrust upon us an intellectual burden often grievous to be borne, so that we are not to be blamed if, at times, we attempt to

cast off these fardels and be free. The effect of the intellect upon us is insidious, and when, like Joseph, who was sold as a servant, our feet are laid in fetters, the iron seems to enter the soul.

Thus it is that the untamed spirit of man breaks out and for a while, at least, luxuriates in the natural liberty which, in his allegiance to the intellect, he seemed to have foregone. Again, it is a sense of weariness which overtakes the mind and all but persuades it that its intellectual labor has been a thing forever in vain. Did not the Hebrew mind, not so conspicuously intellectual, distrust the advantages of the intellect to the extent of saying, "Of the making of books there is no end, and much study is a weariness of the flesh"? Or did not the Greeks, whose temper was so finely intuited in Nietzsche's *The Birth of Tragedy,* try, at times, to repudiate Apollo, god of culture and enlightenment, and thus release the barbaric Dionysus with the feeling that his crudeness and violence might be more enlightening and much more agreeable? Aye, even their Socrates, as it were stepson of Apollo and famous for his intellectual insight—did he not at last repudiate any possible interest in speculative matters and resort to a study of good conduct as the most fitting employment of reason?

Earlier Eruptions

Let Scholasticism embrace the mind with its intellectual forms, even when these are duly softened by religious feeling, and it will find man seeking the more languid logic of some mystical movement, like that of Meister Eckhart and Thomas à Kempis. When modern thought tightens the reins of reason and tends to render man submissive to mind and mechanics, even emancipated minds as Rousseau and Voltaire will rebel and have their heroes, like Emile and Candide, return to nature and seek truth by cultivating the garden. Give us the rigid scientism of the nineteenth century, and even some of the most intelligent minds will feel its staleness and seek something novel and startling, just as the post-Victorian period has turned to syncopation in music, futurism in art, as well as frank innovations in feminine attire. Now, it was when this amiable confusion was fermenting that Mysticism and Pragmatism came into the world of philosophy as tho entering into their own kingdom.

But apart from the special turns which the thought of man will take at certain junctures in the history of culture, there are just as definite moods which will contrast themselves in such ways as to indicate that the human spirit when it engages in thought is not fully

persuaded in its own mind. Man will give himself up to an extended period of contemplation, but the time comes when he seeks relief in conquest. Then, as among the Hindus, the Sankhya of speculation recognizes the Yoga of practise. Then the belief in salvation by an inward faith seeks reenforcement from the cruder conception of salvation by works. When the intellect is strained to an undue pitch in the intellectualism of Thomas Aquinas, man seeks relief in his will and sets up the voluntarism of Duns Scotus. Let chivalry come to a pathetic climax in Don Quixote and the human spirit can welcome the practicality of Sancho Panza. A Hamlet who has been over-intellectualized will come to the tragic realization that he is unfitted for rigorous action, while a Faust surrenders the advantages of a German university for the opportunity to do such a useful thing as drain a swamp. Flaubert saw that romantic reflection was bound to unfit one for practical action in the real world, just as Turgeniev tried to make his characters realize that Russian reform could not be brought about by lying on the earth to look at the sky. In our day, Thomas Hardy, his thoughts so fully enmeshed in scientific conceptions, was ready to conclude, as he does in *The Return of the Native,* that thought is a disease whose fever makes one long to escape from the

coil of things and revert to a sort of Æschylean coolness and calm.

These reversals and moods have in them the essence of that anti-intellectualism which, of late, has been glorified in the form of academic doctrines supposed to be of philosophical import and pedagogical significance. They seem to capitalize the confusion which, at times, descends upon the mind of man when he suspects that he knows too much for his brains and has let his knowledge get away from him. The way in which the modern mind has organized its knowledge in science creates the impression of a vast intellectual corporation whose management is almost too much for even a master mind. If we cannot break up this trust, we can demand that it declare dividends, since science which has made such demands upon our minds must have something for our lives, and the philosophy which has never really led to any palpable conclusion should end in a practical consequence.

Direct Action

Both Mysticism and Pragmatism, as specific expressions of this general mood, agree that knowledge should rejoice in a certain Immediacy. It should suffer us to touch the things of this world and feel contact with the thoughts of the mind, so that we who are in the world and are supposed to be in harmony with our-

selves may rejoice to feel the mind in sympathetic relations with its various objects. As long as Intellectualism prevails, our knowledge will be offered to us in the form of ideas and delivered into our hands by means of definitions. Hence, it seems, we have a right to demand a quality of experience in which we apprehend things immediately without any annoying inductions. What matters it if we do not "know" in the academic sense of that term? We can experience or intuit things in such ways as to steal a march upon the intellect by getting the gist of things generally. Thus the Immediacy which was lost to view when the period of Analysis set in comes to light again to redeem the time lost in Inference.

There is also in these exploits of the anti-intellectualistic movement a keen appreciation of Activity. Its exponents believe that what cannot be thought out can be wrought out. They will not look for the light, but will work their way toward it. The will shall rouse the intellect from its scholastic slumber and urge it to fashion what it had previously fabricated, to accomplish in a real manner what it formerly achieved in artificial ways. If, as in the case of the Pragmatists, the will is not so fully engaged in exerting itself to see and believe, the results of previous volitions will be examined to see whether their practical results are not fruitful

consequences. Psychology is showing us, so they seem to reason, that intellect and will are only the opposite sides of an inclusive mental process; hence it will be possible to use the will as both doer and thinker. Perhaps it can force us to the conclusions which the feebler understanding cannot so readily draw, or even make the knowledge which it fails to find. Man has used his head, but now he must employ his hand and "philosophize with a hammer," as Nietzsche expressed it.

The special methods, tendencies, recipes or whatnots exhibited by these amiable radicals might be expected to be cognitive novelties bearing but little analogy to the stubborn principles of the intellectualism from which they would tender their adieus. But, in truth, they seem more like branches which are broken off from the olive and grafted in the grove to partake of the root and fatness of the tree. They appear to yield idealism without ideas; intelligible experience which is not intellectual: "a fringe of vague intuition which surrounds intellectual representation;" a spiritual life which laves harsh thought until it softens; a living acquaintance with objects in place of distinct description; concern about consequences rather than conclusions; humanistic values instead of rational validities, etc. Are the advocates of these views breaking through into new regions or

merely beating about the well-known bush? Are they like "research professors" who are supposed to make contributions to the established body of knowledge, or merely students who take on extra-curricular activities for which they may or may not receive credit from the academic authorities?

The names of those who are most eminent and influential in this new field are invariably indicative of pure spirits, affable personalities, and authentic culture. In certain cases, their writings betray literary style, which is a rare thing in the library of philosophy. Rudolph Eucken may be recognized as a spiritual personality expressing itself with almost religious fervor. William James, for all his jaunty manner and bantering style, reveals a certain anguish for the truth which he pursued in more than one field of research and reflection. Frederick Schiller upholds a Humanism remotely resembling that of the German poet, albeit in a sweetly diabolical manner. John Dewey, convinced that the democracy can be educated, pursues his Pragmatism as a sort of pedagogical project. Henri Bergson, perhaps the most alluring of them all, yields the most striking contrast between his type of Mysticism and the older intellectualism whose claims he states so justly that his thought finds it difficult to escape its conclusions. As men of genius who work in almost

complete independence, they agree to distort knowledge for the purpose of discovery. Theirs is the dissonance of speculation which hopes to end in a new type of harmony. Having viewed them as a group, we must consider their claims in the more exact form of philosophical theory.

Mysticism

The term, "Mysticism," has been referred to and is now resumed to indicate a theory of knowledge which affirms the immediacy of truth and exerts effort for the purpose of working its way out of intellectualism backward or upward to some sort of living object. In place of this misleading term, we might have used "Intuitionism," but that might have confused a metaphysical method with a moral one. "Immediatism" might have been employed, but it is an unwieldy and artificial word which, further, suggests a kind of empiricism. Hence Mysticism shall have to indicate a way of thinking quite remote from the medieval one, altho the earlier movement did set up a spiritual goal toward which it moved only after a moral and spiritual struggle to which the contemporary "effort of intuition" might be likened. But so different was the situation in the thirteenth century, so distinct its motivation, that we cannot, especially in the case of Bergson, establish any sort of connection between the two movements, which

do suggest perhaps slight analogy. The advocates of our movement are Eucken and Bergson; one working out of intellectualism by rising above, the other releasing himself by sinking beneath it. If Eucken was correct in his considerations, there is a Spiritual Order, a *Geistesleben;* if Bergson is right, there is a Vital Order, or *Élan Vital.* Certainly, in neither case is there a World of Ideas or a Cosmos of Laws which is to be accepted as the ultimate basis of knowledge or ground of existence.

Latter-Day Mystics

When men, as in the case of those anti-intellectualists, have been schooled in the ways of rationalism and then decide to forsake it, readers of their novel works will be more than likely to watch the way in which they conduct their discussions. If they abandon philosophy and turn to other than reflective occupations, or if they give up the academic life altogether, they will escape any possible charge of inconsistency. But if they follow the same general course along new paths, the question will arise, Are they not guided by the same familiar landmarks? Or perhaps they will seem like travelers who acquire a new tongue, but who are forced to keep translating the foreign phrases into the forms of the mother tongue instead of thinking in an alien language. Of course, both Eucken

and Bergson persist in using intellectualism as a means of conception and communication, and since that is bound to be the case we may well resist the temptation of suggesting that the anti-intellectualist's attempt to repudiate intellect by means of intellect seems like the effort of Satan to cast out Satan. Now, the main difficulty which these "Vitalists," so to call them, encounter is to find a non-intellectual principle wherein they may rest, since Spiritual Life and Vital Force do not appear to be dependable.

Yet it must be admitted that these strictures which the critic of Mysticism would place upon both their method and object are not wholly just. For, they who are called "anti-intellectualists" are such in name only, since they do not attempt to cast out intellect or themselves abandon its forms; their aim is to place the intellect in its proper place, which is a secondary one. Kant himself did as much for the human understanding as the very worst of rationalists could desire; hence there can be no charge of *lèse majesté* where his Transcendental Logic is concerned. But this same Kant, having exalted intellect to the supreme position of dictator of all existence, proceeded then to reveal something still superior in the moral will with its tremendous Categorical Imperative. Now, if Eucken and Bergson, in making intellect secondary, would make morality primary we should know

what to do with them; since we know how to handle the distinction between a "What Is" and a "What Should Be." We can call one Idea and the other Ideal, and can spend much valuable time considering whether the free principles of ethics are as good in the interpretation of nature as the firm principles of physics are in legislating for the moral life. But Mysticism does not seem inclined to conduct its arguments in such an old-fashioned way.

Sacrifizio dell' Intelleto

It may appear, then, that the intellectual sacrifice is not so great after all. The modern mystic will do no more than attempt the reduction of intellect to something of a more fundamental character. The trunk of the Tree of Knowledge, as it branches out so splendidly above, must be followed down to the roots below into a kind of subintellectual soil if it is to be understood. It will still flourish and its fruits be garnered as of yore, but it will be appreciated that it is secondary to and dependent upon something more basic. Now, this subintellectual principle is easily identified by Bergson in the form of Instinct. In his mind, "Instinct and intelligence are equally elegant solutions of one and the same problem." Eucken was not so naturalistic in his mood, hence he could not be so easily satisfied. He must reduce intellect to something of a more

worthy character, something spiritual, or that *Geistesleben* of which he loves to speak.

The person who has long been disposed to regard the intellect as final will have some trouble following these mystics down into the subrational realm where they find their starting points. If only they had referred to something tangible, even matter, we should be in better condition to consider their claims. We know, of course, that the intellect does have a way of referring to something other than itself. It makes us aware of non-intellectual objects and gives us reasons why we should accept the principles to which it leads. But we become so engaged with the intellectual process and so enmeshed in its forms that we may forget the thinker who puts forth his thought. The possible situation here is akin to that represented in the nursery rime of the mysterious person who was going to St. Ives and met the man with seven wives, each of whom had seven sacks containing seven cats, each with her seven kits. When one asks, "How many were going to St. Ives?" he begins multiplying by sevens, when it was only the one person who was going along the road where he encountered the various sets of sevens. Now, what is it that considers the objects of its knowledge as things merely encountered, and which further can be enumerated, if one so wills? Or

what is it that puts knowledge forth as the living tree spreads out its branches?

Life Natural and Spiritual

The latter-day mystics whom we are considering refer us to this prerational realm by pointing behind them. It is "Life" in some form or other which was and ever is the source of that which we recognize more definitely in thought. It has grown up along the tree-trunk of reason to branch out into diverse deductions and sundry inductions, and its fruits we gather in our sciences. What it is in itself, and how we are to grasp its nature, are different matters. Bergson identifies this life with something which we can feel within us and observe significantly in animal instinct, so that we may have to go to the ants to learn wisdom. Eucken was just as thoroughly impressed by the primacy of the vital principle, but was not for a moment disposed to look for it in the natural order. Life for him must be a form of The Spirit, or that subtle and tremendous thing the Germans call *der Geist*. We cannot experience it with the senses; we dare not define it in the vernacular of common knowledge; for Eucken is prejudiced against "Naturalism" and "Intellectualism."

When it comes to a more precise and human conception of this aboriginal Spirit, Eucken avails himself of ethical ideas with the feeling

that morality in its endless pursuit of the Ideal has kept its skirts clean of that earthliness which appears alike in both the naturalistic and intellectualistic forms of human cogitation. Beneath and behind these he will find a pure and supreme Activity, which he will call the Essential Deed of the Soul. Now, Eucken went as far back as his co-patriot, Fichte, who was famous for the ethical idealism which he had developed by making Kant's moral ideal, the Categorical Imperative, operate in both human life and the natural order. Indeed, if we were to interpret Eucken on the basis of historical philosophy, we should say that he passed from the Self-Activity of Fichte to Plato's World of Ideas without going through nature. Once established upon that dual basis, Eucken's thought proceeds in a manner most esoteric. Its vagueness and subtlety make reasonings of logician and scientist seem unusually simple, for they define their terms and state their cases.

But just as we are about to abandon such mysticism as both meaningless and hopeless, it occurs to us that perhaps we, too, have some hold upon this abysmal principle which the mystic presents in such a provoking manner. Perhaps we have felt it in some uncanny way, or observed its expression by poets and prophets. No matter how shallow we suspect our thought to be, it seems to have issued forth somehow from

a native sense of truth or appetite for knowledge, if only in the form of a longing. And, then, we feel that we are in possession of a kind of intellectual conscience which may listen to, and perhaps decide upon, the merits of arguments without itself being of an argumentative nature at all. Yes, we feel that we can approve or disapprove of dialectical decisions, just as we feel that we can form a just opinion of the decisions handed down by the Supreme Court.

We might call this non-intellectual way of appraising truths our genius; not that we individually are geniuses in any sense at all, but that we rejoice in the genius of humanity which operates in the realm of the spirit the way instinct moves about so securely in the natural order. We feel, too, that certain representatives of our race, especially men of primitive days, were able to arrive at something like the truth, when their spiritual cunning led them to positions not wholly unlike those which would be taken later when men had developed concepts and deduced laws. Aye, those who "saw life steadily and saw it whole" must have availed themselves of non-intellectual insight, else whence the wisdom, the coherence and plausibility of their fervent utterances?

Poetic Insight

If we call this "poetic wisdom," we can realize that Æschylus, with his massive views, attained to a conception of things generally before Aristotle perfected his analytical method. We can believe that Dante exercised a vision of spiritual life as true as that of Thomas Aquinas, from whom he derived the more definite notions which he expressed poetically. We may feel that Shakespeare, rich in observation and almost riotous in expression, was as intelligent and instructive as Bacon, who went at nature armed with inductive weapons. Goethe, too, must have seen into the maze of things by means of an energetic vision which, at last, will be found to count as fully as the transcendental logic of Kant. Browning may have been as wise as Darwin; and we, too, for all our lack of talents, may be exercising the insight so significant with the poets, who never dreamed of the Law of Identity or Method of Agreement. Hence, in default of a more adequate way of getting into the depths of the subrational realm of the modern mystic, we will search out the sources of esthetic experience, which may yield truth as well as beauty.

We feel, then, that the idea of poetic insight may bring us into the vicinity of that subintellectual realm whence these new mystics proceed.

Here, too, may be the original home of that Urge, as we may call it, which laid hold of men in the form of frenzy and allowed or forced them to express sentiments which later crystallized, perhaps, in logical and scientific forms. Now, the most acceptable form which this abysmal consciousness assumes is that of Genius. Its very nature would seem to defy definition, its superiority just as fully to forbid any banal notion of it in the form of psychology or psychiatry. It can be appreciated where it cannot be apprehended, and employed as evidence where it cannot so well be demonstrated as truth. The genius has seen truths, and nothing further can be said. Evidently he has caught the creative spirit of the world, else we are at a loss to comprehend how he fashioned the forms of architecture, sculpture and painting, or how he improvised the modes of poetry and music. He has proceeded instinctively and availed himself of those massive methods of expression which are recognized in the fine arts especially when they are compared with the natural sciences. Has not the work issued forth from something like that utter region in which the philosophical mystic assumes to find, as in a *pre-a-priori* position, the veriest Principle of Identity?

It is quite manifest that the creative work of art was so spontaneous as to rise and develop long before any rationale of beauty was ever pro-

posed. The Greeks had done their constructive work, they knew not how, before Aristotle attempted a philosophy of art; for poetry always precedes poetics. The art of the Renaissance was finished before inquiring minds felt inquisitive about its forms, and modern art was well established prior to Kant's *Critique of Judgment*. Now, criticism is parallel to intellectualism, while art is aboriginal and independent. As far as we participate in such superior concerns, we may content ourselves with the thought that we possess and exercise Taste, whereby we are informed, as tho by an esthetic conscience, that this is beautiful or fitting or harmonious. We have thus made a sort of descent into the impossible realm of Spirit and have regained our original position so much the wiser for our excursion.

Moral Intuition

Another descent into Spiritual life is promised by the moral nature of man whose level must be as profound as that occupied by the esthetical. When we consider the behavior of man on earth, for better or worse, we must realize that the norms of conduct and standards of worth must have come into being and become operative long before any system of analytical ethics was planned by the reflective mind. Socrates may have discoursed upon virtue, but his Greeks

were virtuous in a way before he opened his mouth. Plato may have analyzed courage and wisdom, but the Spartans were brave and the Athenians wise before he started his dialogs. Not only do our moral ideals appear ever to anticipate intellectual theories about them, but they have a way of filtering through the forms which we prepare for holding them.

Doubtless we shall never be able to give a good explanation of, still less justification for, these moral precedents; but we can realize that they are there, and that they conduct their affairs in independence of anything that we think about them when we come to the place of analysis. The moral ideal, so to call it, makes the motion which reason seconds and society carries. Itself it makes direct appeal in the form of a special sensitivity, which may be identified as conscience, and may further be recognized in the form of general appropriateness. We consult inclination and consider consequences when we are confronted by a moral crisis; but however we may reason, we still feel a sort of intrinsic rightness about an attitude or act. We think of things, acts, institutions and the like as desirable because of their subsequent utilities, but desirability as such precedes and subtends all these special calculations of the reasoning spirit. Now, in this ultra-natural and ultra-rational realm, we feel that we are not far from

the mystic depths of the anti-intellectualist; only he is subtle where we fain would be simple, profound where we aspire to be plain.

The Enormous Dream of Religion

The career and character of Religion appear to be such as to afford us another likely line of descent into the desired domain apparently preempted by the professional mystic. This source of sepulchral or abysmal sentiments, out of which our weird philosophers will evolve the world of our experience, seems unusually promising. Here, in this supremest of sentiments, we have the enormous dreams and gigantic aspirations of the Asiatic mind so indifferent to any calculating and critical ideas which might arise later, as in the western world. Here is a spiritual program which did not end until it had produced, as tho out of air, the staggering notion of Godhead as well as the stupendous idea of the human soul in all its immortality. Here, too, in the bold beliefs of mankind, is a decided touch of the cosmic, inasmuch as faith inclines to the prodigious idea that the natural order, no matter how philosophy and science may handle it, dates back to a situation marked by the extraordinary idea that matter is the creation of spirit. Now, if this doesn't let us descend into the world of Eucken and Bergson, we shall have

to give up the idea of any subrational, subreal realm.

In the case of Bergson, the use of the term "Mysticism" is far less plausible than it was with Eucken, since the French thinker confines his speculations to the natural order, which does not admit of any specifically spiritual message except, perhaps, as we think of Bergson as a modern St. Francis who preaches to or about flowers and birds. His guide was Fabre, the "Homer of the insects," not Fichte, prophet of moral idealism. Nevertheless, Bergson makes use of a subreal, subrational principle, and, like Eucken, seems to have been affected by the nobly preposterous philosophy of Plotinus. With Bergson, however, the aboriginal principle, which serves as a sort of Scholastic *natura naturans*, is somewhere within the range of experience, since it partakes of consciousness, freedom, life, action, creativeness and the like. These we feel; and when we consider them on a large scale, they account for the physical world. If we regard this existential order as a pyrotechnic display, God may be thought of as the living, beaming center whence shoot out the very rockets of reality. Once they are shot out and cool down, we may analyze them as science does when it uses a mathematical method to express the mechanistic form of matter; but if we desire to

grasp them truly and source-wise, we must avail ourselves of unusual methods.

Bergson's Intuition

This method plenipotentiary receives simple expression in the hands of Bergson; when he uses conventional terms he does not fail to invest them with egregious meanings. Apparently, he was impressed most of all by the philosophical possibilities of "experience," but when he uses the idea which that term might convey, it is for the purpose of having us feel our immediate relationship with the Flux of Things, or the flux out of which things come. Hence we verily experience something which is not the object of experience at all, since we feel life, freedom, time, motion and such fluid things in a way which would be impossible in our experience with solid objects. This intra-empirical method, as we might try to call it, yields "intuition," which would be lost in obscurity were it not for the fact that Bergson keeps it in close touch with instinct. If, therefore, we can distinguish the moods in which we come in contact with moving, living things and inert, dead ones, respectively, we can identify his primary method as easily as we can distinguish the spirit from the letter. Our insight will depend more upon attention than upon memory; more upon vigor of will than upon clearness of intellect.

All of us feel well acquainted with experience, since it is the way we get in touch with things and keep up our active relations with them. Then, in a way, we are somewhat familiar with intuition, for we use it if only in a spatial manner when we observe a part in the light of the whole; or when we realize that a geometrical figure like a triangle appears to be cut out of all space instead of existing in any independent way. But our practical use of experience and intuition will have to be vivified and glorified somewhat if we are going to use these as ways of knowing the world as a flowing process, evolving system, and creative scheme. We have had our dealings with and have based our calculations upon inert matter, but when a Theory of Knowledge is to be based upon a Theory of Life, our cognitive process will have to be born again. The same will hold true of what we usually call activity, since our habitual exertions, which go forth into the world of things to handle and shape them, must now turn inward and exert its powers upon the staid thoughts of the mind. If, then, we are in a mood to exert ourselves so that our dead experience shall become vivified by living intuition, we can begin to bergsonize our philosophy.

Now, the temper which Bergsonism is likely to engender is something far different from the cool intellection in which one adjusts a formal

mind to a fixed world, with the hope that the adjustment will be sufficient. Of course, this can be done, and Bergson will never deny it; but such an adjustment of thoughts to things will be like building a raft with parallel sides, only to awaken to the terrific realization that the impromptu craft is afloat upon a vast and powerful stream, which carries the whole psychophysical creation along upon its surface. As far as the things of this world are concerned, we are in no position to redeem them from the danger of their deathly reality, but we may be able to do something for our minds; and since we are in pursuit of Bergson's way of thinking, we will indicate what that is like.

Freedom and Truth

In this philosophical pursuit, we can make some initial headway by reversing a common maxim, "Ye shall know the truth and the truth will make you free." In the present instance, the exercise of freedom precedes the acquisition of truth; hence we must say, "Ye shall be free, and then ye shall know the truth." The usual conduct of the understanding, which in our reasoning along the lines of induction and deduction seems so difficult for us, is really a lazy way of following the lines of least resistance as these are laid down for us by the forms of objects and the mechanical behavior of things.

This inert and imitative relation engenders at once a "natural geometry" in which even the savage is more or less adept, since he better than the civilized man can judge distance and direction with surprizing accuracy. Indeed, we might imagine the primitive Pythagoras of the Stone Age coming upon a pyramid-shaped stone which he could turn over from side to side without causing any change in the figure, whence he could draw certain significant conclusions about the nature of inanimate objects. In Bergson's mind, our mathematics and logic follow from such obvious observations. We are the born geometers who are at home in the world of the inert and dead. Something must be done to the mind to make it a vital *organum* able to embrace time and motion, life and freedom.

Intelligent enough are we—and how sophisticated has our science made us!—but we have such intellectual insight into the dead forms of things that the living content and animating intention have escaped our minds. We have let the things of this world lure us, and in the rational comprehension of them we are persuaded that we are wise in the ways of reality. In vain do skeptics warn us that we are touching only hollow shells and mastering but the appearance of things; we believe that we are dealing with utter realities whose regions we measure and their relations comprehend. When we reflect philo-

sophically, we awaken to the realization that the scientific view of things is all too true, since it yields the artificial clearness of a pictured landscape as seen through a stereoscope. Perhaps, as the ancients suggested, our knowledge does not know. Or, as Montaigne recommended, we should be dumb in order to be wise. Or, as Bergson insists, we must be free if we are to know.

Drawing the Kites In

"We must, by a strong recoil of our personality on itself, gather up our past which is slipping away, in order to thrust it, compact and undivided, into a present which it will create by entering." Such an effort in the reverse of our natural procedure might be likened to that of a boy flying a kite which slips away from him with such ease and is with much difficulty drawn back into his possession. Now, inward and intuiting effort of this sort is necessary for our minds, if we would bring our knowledge back to its original source. Bergson himself likens this effort of intuition to the experience of a person who listens to a poet read his verses. As long as the listener heeds the meaning of the words and enters into the intention of the poet, just so long will he grasp the meaning of the poem as such. But let his attention relax, and he will find himself getting no more than individual lines, phrases, words, syllables, letters, whence

the meaning of the production is lost to him. Thus it is only as one keeps recoiling upon his ideas, drawing in his kites and reenforcing his powers of attention, that he can grasp the intuitive meaning of vital existence.

All of this has to do, however, with the mood in which we entertain intuition, but not so much with that mental process itself. What is intuition? Naturally it is not easy to answer a direct question of this sort; not because we are unable to grasp the subject-matter or are mentally deficient in powers of definition, but because the thing in question does not permit of anything definitive, especially as it is not a thing at all. Aye, its very nature is such as to render it indefinable however fully it may be felt. We can tell how it is lost in the more usual exercise of intellect, but cannot so easily show how it may be found again. In spite of the inherent difficulty in handling the intangible, we are not rendered wholly helpless when we aim at intuition on the wing and try to bring it down. We pursue it after the manner of instinct, just as empiricists follow *a priori* ideas along the line of the innate. That is, we get at it in a corporeal, animalistic way.

The Ignorance of Intellect

Now, if Fabre, from whom Bergson seems to have learned so much, was the "Homer of the in-

sects," Bergson may be regarded as their Plato. He has profound respect for the silent, subtle forms of instinct, for he believes that it contains its own solution of the problem of life. Instinct commends itself to his thought, since it deals with things, not merely with relations; is categorical knowledge of matters, not merely hypothetical knowledge of forms; and with its implicit logic of intension, it finds the things which the intellect forever seeks. The intellect has a place and fulfils a function, to be sure; but its place is the inorganic world, as its function is to fixate ideas and install inertia. It forms clear ideas of things when they are distinct and immovable, just as it has power to take things apart and put them together again in such a way as to suggest that space is an enormous jigsaw puzzle to be broken up indiscriminately and then put together according to a plan. It is just this which the scientist does with his geometry. But this signal victory over the things of this world is really a defeat, inasmuch as, in yielding an outer unity, it deprives us of an inner one, so that the more we know matter the less we understand life. "The intellect," says Bergson, "is characterized by a natural inability to comprehend life."

But here is the place where instinct steps in to fill up gaps, provide continuity and vivify the mind. It lets us live the things which our

logic only represents. Its touch with things is so perfect that we can feel their meaning by a process of "divining sympathy," so that we enter into the very inwardness of life. But this is not knowledge, since it lacks consciousness, is not disinterested, and has no power to reflect upon its object and thus enlarge its scope. This disinterested and reflective consciousness had to penetrate such instinctive intelligence or the human mind would have been riveted to its objects, hypnotized by its efforts, and condemned to a condition of somnambulism. Now, the philosophical recommendation which seems to be implied by such criticism is to the effect that the intellect would do well to turn its light inwards to illuminate the vital process there, as it has habitually turned its light outwards toward the inorganic world. It is, perhaps, only the Delphic oracle of the twentieth century saying, "Know thyself! Know thyself as a living, instinctive, intuitive consciousness, and not merely as a thinker!"

Such a system of intuition, which is of itself bound to lack clarity, becomes more distinct when its faint light is thrown against the dark background of intellectualism. We gather what it is when we discard what it is not. In contrast with his fellow mystic, Eucken, Bergson does not for a moment hesitate to reenter the field of intellectualism which he has abandoned; and

where Eucken indulges in no more than significant impressionism, Bergson proceeds to definite analysis. He is so convinced that he has found a new mode of philosophizing that he is more than ready to review the old one whose shortcomings he delights to point out. He can afford, he feels, to give the intellect all manner of credit, since at last he can refer and return to the living world of mobile reality; just as a sailor on shore leave strolls with confidence about the port because he can always return to his craft and put to sea again.

Intellect Leans on the Will

Bergson's first excursion into the intellectual order is made with the guidance of Pragmatism, which affords him a sort of philosophical escapade. Indeed, his overtures to this theory are so marked that we might imagine him to be a Pragmatist, altho at best, or worst, he is only a Pragmatist of the second order, a Pragmatist *pro tempore*. Since Intuition provides his method of knowing par excellence, Bergson can afford to experiment with this theory and even employ it to the utmost. This quasi-Pragmatism appears at the very outset of his *Creative Evolution*, which introduces a sort of pragmatic psychology pursued in a spirit somewhat cavalier-like. How has the intellect been formed? In close association with and dependence upon action, so that

it is really "an appendage of the faculty of acting." How does it proceed? In the lordly manner of Aristotle and Galileo? No, but rather in slavish imitation of the will which works among inanimate objects and thus teaches the intellect "to think matter." With all its successes here, can the intellect hope to embrace reality when reality is regarded from the evolutionary point of view as The Flux? Can the part know the whole or the "pebble on the shore display the form of the wave that brought it there"?

It must be confessed that our intellectualistic moods are bound to be disconcerted by such evolutionary psychology, which, in Bergson's case, makes mind so circumstantial when an older evolutionist, like Herbert Spencer, could land it at last in a strategic position. "Evolution," says Bergson, "begins by showing us in the intellect a local effect, a flame, perhaps accidental, which lights up the coming and going of living beings in the narrow passage open to their action; and lo! forgetting what it has just told us, it makes of this lantern glimmering in a tunnel a Sun which can illuminate the world." We can come to an understanding with the intellect only as we consider the pit whence it was dug, the rock whence it was hewn.

The crude and narrow home of the human intellect was not in the clouds but the cave. Man

made a tool before he formed a thought. His was the intelligence of Man Making, not that of Man Thinking; or *homo faber* rather than *homo sapiens*. Life was his major premise, action the minor, and thought the conclusion. His initial efforts in making and using instruments out of inorganic matter let him into the secret of the physical world, that of geometry, which is eminently fitted to express the genius of matter and just as well adapted to the operations of the intellect. Once this geometrical method has been adopted, man is astonished to observe how it puts his mind on an equal footing with matter. He tears himself away from practical operations and begins to grasp the whole universe in a geometrical system of astronomy. He pursues this further and observes that, by refining and rationalizing space, he can approach the border line of abstract logic and thus, still handling physical objects and still manipulating space, as it were, can elaborate the deductive logic of the ancients and the inductive one of the moderns. When the Cave Man made a club, little did he dream that he would become the ultimate model of Plato and Aristotle, of Newton and Einstein!

Natural Geometry

Bergson's conception of real mind as a form of activity lets him pass through Pragmatism as

a man on a long journey takes a short cut through the woods. He is now prepared to discuss the nature of the intellect as such, and to witness both its victories and defeats. Its triumphs are those of science, perhaps also philosophy, history, and knowledge generally. In mundane matters, science has shown an extraordinary ability to comprehend and conquer that portion of nature which came within its grasp. It has been even more startling in its astronomical exploits, which have removed the veils of space and time to disclose an eternal order. On the earth and in the sky, the thought of man has availed itself of what Bergson calls "natural geometry," which it has glorified in the geometrical method of Descartes. But this dialectical descendant of the pioneer philosopher of France is not over-awed by the splendid achievements of the human understanding, which has indeed advanced from the light of the lantern to that of the sun. He will draw around all these pretentious notions of the mere intellect the wider circle of intuition. He will take hold of the geometrical mind, and will show how it came to intellectualize itself and spatialize its world; for, as he says, "The more consciousness is intellectualized, the more is matter spatialized."

Common-sense thought is usually satisfied with a descending analysis which finally arrives at the

intellectuality of mind and the spatiality of matter. It may know of a certain kind of psychology which digs under the intellect and a penetrating physics which undermines extended matter; but these seem more theoretical than real, more to be speculated about than built upon. But such a commonplace level of psychophysics is no suitable mark for the ambitions of Bergson's mystical metaphysics. He will dissolve the intellectual and spatial; aye, even intellect and materiality, so that they will float side by side on the surface of the great Flux. Then we shall be in a position to understand how thoughts and things interweave in the total experience of mankind.

Ever since our modern philosophy came into being, we have been puzzled by the plain but paradoxical relationship between the rational and real, the thoughts of the mind and the things of this world. Consciousness had no actual difficulty in drawing physical stimuli into itself to form sensations; as little impediment was there when the will fared forth to operate in the alien world of mechanical things. It was the theoretical explanation of the correlation which invited the trouble and caused the metaphysical worry. It was not that our thought tried to put mental and material together, for they dovetailed naturally, and both investigation into nature and operation upon it invariably corroborated the

connection. No, philosophy tried to pry the pair apart for the purpose of interpreting their unique relationship. One does not hesitate to plan a house mentally and then proceed to build it materially; a mathematician deduces certain theoretical consequences and then proceeds to draw them on paper as he had drawn them from the mind, or even observe nature delineate them as with a gigantic pen of iron. How was this systematic coincidence to be explained? Shall one have matter stamp its forms upon the mind, or the mind place its impress upon matter, or shall one set up some parallelistic harmony between them? Even to this day, one is bound to feel amazement at this agreement of opposites and harmony of discords. The burden of the obvious is too great for the brain.

The Eden of Mind and Matter

Bergson accepts this burden joyfully if not jauntily. It may appear as "more daring than the boldest speculations of metaphysicians," but he is in possession of a method equal to the task. It is the method of Evolution! Yet the moment we have used that now-familiar term to express Bergson's idea, we realize that, in the familiar sense of a progress and perhaps in any sense, it is inadequate. Better is it, then, to consider intellect and materiality, which fit together so eminently, as being engendered instead of

evolved. Now, the radical difference between an engendering and an evolving is one of direction; for engendering is downwards, while evolution is upwards, if we may use spatial ideas figuratively. But it is by means of engendering that we account for the genesis of intellect and the analogous genesis of mind. We cannot take mind as a point and expand it into a world. We cannot take matter as extended whole and contract it into the punctual intellect. For neither act, as performed separately by idealist here and realist there, would give us the genesis of either; neither method would amount to an engendering.

To engender is to see that both intellect and materiality have descended from a higher level to a lower one, just as it is to realize that the water in Lake Ontario has come from the water in Lake Erie by way of Niagara Falls. Both intellect and materiality have undergone a common descent, a common "degradation" from a living, fluid condition to a dead and solid one. Both have been degraded, we might say, from a dynamic condition to a static one. No wonder, then, that they now correspond; they have "progressively adapted themselves one to the other to attain at last a common form" of the geometrical. Together they represent a common diminution of being by means of an extension in space and a detention in time. When we per-

sist in feeling amazement that the order and connection of things should be parallel to the order and connection of ideas, we should consider both ideas and things as being identical deposits on the opposite banks of what once was a vital stream. In this manner the real passes from tension, from freedom, to necessity—the inversion of the Vital Order.

The Living Absolute

But what is that all-real, all-vital something from which intellect and materiality have descended, and whose pure essence now appears in the diminished form of experienced existence? For want of a better term, Bergson calls it "Consciousness," as Eucken would style it "Spirit," and as plainer thought might name it "God." It is "creativeness," which is different from both Creator and Creation in that it produces by easing up instead of by urging itself outward. It has in it no idea of a making-process common to the theological idea of God creating the world, but partakes rather of the thought of Plotinus when he makes so-called creation an extension and weakening of Being, or that which is beyond both being and thinking.

Now, what can be done by us when we attempt to grasp this ineffable Somewhat? We can make the will recoil upon itself, twist it about on itself, act in a free way and thus liberate the mind

from logic. This, which in a way is of a moral nature, has its counterpart in the metaphysics with which we treat the world. True, we cannot make it "remount the incline which physics descends when it pushes matter in the direction of spatiality," but we may be able to discover in nature a principle which, akin to the limited, striving human will, is actually attempting to effect the ascent of the incline which matter descends. This principle we discover in the Vital Thrust, the *Élan Vital*. It is life as we know it, striving like the will to set itself free from the inorganic world; but it is finite and ever hemmed in by matter, so that instead of changing the course of things from downwards to upwards, it can do no more than retard their descent, if not their death. The attempt of life to regain its one-time elevation gives us the meaning of Evolution. If we will let mind in its fullest sense entertain the idea of life in its real meaning, we shall gain the knowledge which can never come from the intellectualistic adaptation of intellect to materiality, as we find this in both Empiricism and Rationalism.

It is difficult for us to avoid amazement at the way in which this practical mystic takes hold and disposes of the things we had counted upon as fixed. Of course, we saw modern biology take the set circles of independent species and link them in the form of a moving chain, so that we

have grown somewhat accustomed to the ways of mobile thinking. Our docks drift almost as readily as our ships sail, and in the floods of our modern thinking river-bank and river-bed become parts of the gigantic stream. But in the reality of the inorganic and intellectual, we expect a steadfastness which fails us when we are dealing with organisms. Hence we are disconcerted and inclined to doubt when Bergson ignores our standards and removes our landmarks. He takes them up and sets them down again, but in their new position they are only relative and temporary.

We would say, as of old, "Thought is here and extension there; they are sadly juxtaposed, but we can count upon them for our calculations." But here is a way of thinking into the nature of things which makes mind more than thought and matter more than extension, so that the fixed *cogitatio* and equally fixed *extensio* are practically lost to our logic. Kant indeed drew space back into the mind to constitute its most commanding view of the world, but this thinker pushes both space and mind back into the Flux, where their original relationship is maintained only in the way that two vessels may keep abreast as they navigate the same sea. Consciousness is not inherently intellectual, but it may be made so; matter is not necessarily

spatial, but it can be spread out over an extensive field.

The Reality of Time

This general attack upon the intellectualistic mode of procedure will become clearer when we attempt to meet two of Bergson's flank movements. These are made by time and motion, and are directed against space and matter. As to time, the mysterious function of all things, we may assume that herein is found the supreme principle of Bergsonism. Time is his favorite idea, his first principle, his god; by it are all things judged. Ourselves, we do not take our time so seriously, but regard it as a secondary principle of reality as the course which things take, the velocity which matter acquires, the means which evolution has employed. We do feel it within ourselves, but we assume that its touch is not fatal; we do observe it in things, but we are persuaded that its sway is not omnipotent. But Bergson has been more fully impressed by the temporal process which seems to rule reality and make all nature a process of growing old. Time is for him, then, something utter and ultimate. "If time is real," said Bradley, "our Absolute is a delusion." "If the Absolute is real," Bergson seems to say, "my time is a delusion."

Of late, we have seen time poured into space

in the form of an extra dimension in the fuller space-time framework of physical Relativity, but we imagine that this physical time of Einstein is not the domineering, destructive thing which Bergson insists on using. It intrudes upon space and matter, but is itself under some sort of control. Like the rest of us, Bergson makes the distinction between time-order and time-lapse, so that, in a way, we feel at ease in Bergsonian duration. But we are immediately unhorsed by his claim that time-order is not the thing at all; it is time-lapse, living, moving, penetrating time which counts in the real world. Time is not alien or antagonistic to reality; no, for when we experience the temporal, we entertain realities as angels unaware. Then we realize that time is at least analogous to ultimate reality. It is not a mere form, but sheer force which accomplishes results, makes things and thoughts, and provides for novelty in the universe. We may set up a system of rational mechanism as the basis of reasonings, but it is once and forever refuted by the consideration of real time in the way that the firm raft is "refuted" by the flood which sweeps it along. With such a rich and realistic sense of time in mind, Bergson proceeds to deliver time, and motion also, from the hands of its intellectualistic friends.

Intellectualism was naturally a bit arbitrary in dealing with its subject-matter. Things and

thoughts had to be fixed if they were to be known, just as, in the days of old photography, one had to sit still if one wanted the picture taken. How did intellectualism place its object when it made it pose for the rational picture? With space and matter there was no trouble, since these forms of still life were adapted to the static by which they existed. With time and motion, it was quite the other way; they are naturally dynamic, so that there is something wrong with fixed representations of fleeting objects. The thing that the intellect did with time was to take it or think it in terms of "instants," like the marks on the dial of a watch. The thing that it did with motion was to consider it in terms of rests, like numerical degrees on a thermometer or figures on the face of a speedometer.

But in vain was the net spread in the sight of the bird; the human intellect was as the child racing about and crying "Bat, bat, come under my hat!" For time is not a fixed instant or any number of these placed side by side, closer and closer together: motion is not made up of rests, no matter how many of these we supply. Our miserable coppers may amount at last to the value of the gold piece; but this is only arithmetic, which arrives at a mathematical result, not alchemy, which would alter the natures of things and thus change base metal into gold. Feel time,

live time, use time, and you will understand its nature; but the moment you begin to think time, its glory is departed. Now, what is the secret of this predicament?

The Flux

The predicament arises because the intellect uses inertia as its first and final law. It must deal with something definite—a number, an idea, a law. To obtain the definite, the intellect must check the course of things, which will mean instants of time and phases of motion. In its desperation, as it sees fluid time and motion trickling through, it may use finer and finer methods to the thousandths of seconds, but the intellectual vessel is still a sieve. Apparently there can be no commerce between the fixed intellect and the fluid world, no mutual understanding between mind and mobility, since they speak different languages. The intellect has its place and performs its function when it guides action in the direction of inert matter, but its usefulness is at an end when the coastline of durational, mobile reality is reached. Hence, it seems, we must abandon our staid vehicle of thought and avail ourselves of a vessel fit for the fluid order of reality.

The philosophic passage-at-arms arrives when Bergson shows us how, in his opinion, reason is paralyzed when it attempts to account for

motion in the temporal mode of velocity. By the use of ancient dialectics and modern science, he seeks to dismiss all rationalists as one man may chase a thousand. The metaphysical paradox of Zeno is united with moving-picture apparatus, so that the old puzzle of motion becomes the new "cinematographical illusion." We persuade ourselves that we see and think motion when nothing of the kind is possible. We verily know that Achilles will catch the tortoise even when the swift runner must first come to the place which the slow walker has just left; we are sure that the minute hand at three o'clock will pass the hour hand, which is a quarter of the distance around the dial. Our trouble arises when we endeavor to give a reasoned account of what is so surely experienced. We are brought to a pass where experience and reason have had such a falling-out that, apparently, we must stand and choose which we will serve. The experienced course of things seems to be of one order, the rational relation of them of another. Zeno chose reason, Bergson takes experience, but we want both.

Our apparent trouble is that we are now thinking time in terms of space and looking at motion after the analogy of matter. We have spread time out in order to measure it, and have laid motion down along its physical path. If we treat our puzzle technically, we can reason that

time above the space below, so to speak, may be adjusted in such a way as to have both time-lapse and time-measurement. If the opponent of rationalized motion proceeds to disconcert us by breaking up the space to be traversed into an infinite number of parts, we will meet him by doing the same thing with the time which is to elapse in the way that space is to extend. Every time he confronts us with a jot of the spatial, we will match him with a title of the temporal, and thus keep up an "instant-to-point" correlation, which will make the matter more difficult for him and, perhaps, easier for us. He will have to admit that now, with as many little times at our disposal as he has little spaces, we are in a better position to appreciate the puzzle which, however, we cannot as easily solve; and it does look as tho we were assuming in an empirical way what we should prove in a rational manner.

Snapshot Judgments

Now, Bergson presents the puzzle in a vivid way when he likens the views of motion assumed by the philosopher to the snapshots of the moving object as these are taken by the movie photographer. Of course, there is motion in the object and another form of motion in the machinery of the camera, but no such motion is found upon the film. There it is a protracted series of single, stationary pictures which are

run off in such a way as to create the illusion of motion. But this was a fairly dangerous illustration for Bergson to use. If, with the old photography, we were to have a row of cameras placed side by side, each to produce its single picture of the object as it passed by; and if, later, we were to scan each separate exposure no matter how rapidly, we might admit the validity of his photographic objection to our supposed grasp of motion. But with the moving-picture film as with the living eye, we feel that, for all the separate representations involved, we are obtaining motion as such. The mobility of the eye and the mechanism of the camera give us motion in a kinesthetic, cinematographical manner.

So, likewise, with the simpler representation of time by means of a spatialized dial, which gives an exact albeit artificial conception of temporal flux. When we let the second hand go, as in timing a sprinter in a race, the movement of the hand gives some general idea of the speed of the runner on the track; when we use a stop-watch and thus fixate the very instant when the runner reaches the finish, we do not stop time or give up our way of measuring it. All that we do is to indicate that we are done with the special portion of time which interested us. If our chronometers were all stop-watches which ceased ticking at each second or fraction thereof, we might complain that we had no means of grasping

time's meaning. But when we measure moving things, we use moving apparatus which operates in a different manner from the yardstick which doesn't move at all. We do place ourselves within the temporal order just as Bergson says we must do; but, instead of being satisfied with a personal impression of time, we carry along a moving mechanism adapted to giving us that temporal impression which is true for all minds, so that to one it may not seem short, to another long.

But has the intellect of man any such apparatus which will prove effective in letting us grasp that mobility which is obvious in nature even when it may not be absolute? Or must we abandon intellect and embrace intuition? The advantages of intellect are apparent; it gives us our science, our philosophy and serves in less rigorous ways. The advantages of intuition are less palpable, since it appears to be more of a last resort than a first principle. If, now, duly crediting the intuitive faculty with its ability to enter into the nature of things and account for their inter-relations, we can absorb these advantages intellectually, we shall be like a shipowner who profits by the cargo which his vessel brings home in its hold.

But Will Not Thought Do?

The intellect is usually staid in the way it seeks to exercise steady vision. It resorts to methods which are frankly artificial, as in the form of simple counting or in the process of deductive reasoning. But the achievement of an end, as in enumerating or reasoning, is not the whole, altho it may be the most spectacular part, of the story. Leading up to it is the long and often tortuous line of thinking whose inherent difficulties require a power of attention equal in arduousness to a possible effort of intuition. Now, that which pursues a path similar to that of intuition, and arrives at ends which intuition can never find, is the process of Thought; it lies behind all philosophy, all science, all genuine activity of the human mind. A process indeed is thought, since it does not begin with the neat definitions which come to be elaborated later, or form logical judgments of a strict sort until it has first used simpler connectives peculiar to the psychological process of cognition. The very use of that expression, "psychological process of cognition," is calculated to convey about all that it is reasonable to expect of intuition.

When the thought-process, starting with sensation and feeling and guided by attention and memory, does perfect itself, it comes into possession of a method admirably adapted to both

space and time, matter and motion, the inanimate and living. For it is of the very genius of thought to penetrate into the essence of objects, as material atoms and living cells, while it has in it the power to bridge over gaps which may appear in either the train of ideas or the course of nature. Thought punctuates when it deems this desirable, but it is more likely to pursue the smooth syntax of reasoning and thus involve what is conjunctive and harmonious in both reason and reality. If it had not been a natural process, it could never have given us science; if it had not been continuous in its character, it could never have expressed man's rich experience in the world. Even after it has been subjected to the critical analysis which comes forth from logic, it rejoices in a degree of "vague nebulosity" and "indistinct fringe" due to the finitude of the human spirit, as also to the unwinding of old threads and the introduction of new ones. The kind of intellect to which Bergson refers when he contrasts it with intuition is something which exists only as a logical norm, not as a working intellect.

ADVERTISEMENTS

You Have a Right to Happiness

It is your duty to seek it. Fulfil the nine easy conditions conceived in the master mind of Jules Payot, Litt.D., Ph.D., rector of Aix-Marseilles University, and happiness is yours. These nine conditions are eloquently described in that remarkable and enthralling volume

The Conquest of Happiness

By JULES PAYOT, Litt.D., LL.D.

Authorized Translation by Richard Duffy

This gripping book is ready for you. Read it and the sun will seem to shine brighter thereafter. You will thrill with desire to do as the distinguished author suggests. You will find yourself already journeying joyously on toward your God-given heritage. Through its influence, sorrow, disappointment, pessimism, discouragement are made to release their paralyzing hold and yield to invigorating thoughts which lead to the realization of enduring personal happiness.

"Read this sane and able book on an all-important subject. You, too, will then understand the waking up that it engenders."—*Star, Washington, D. C.*

"This is a book that is destined to be widely read. It carries a message for which many troubled hearts will be waiting; the message of encouragement."—*Banner, Nashville, Tenn.*

"You can not afford to be without a copy of this golden book. It will companion you through life, lighting your path through the shadows. None may read it without inspiration, and to those who assimilate its golden truths the conquest of happiness is already possible of achievement."—*Times, Albany, New York.*

12*mo, Cloth.* 421 *pages,* $1.75; $1.89, *post-paid.*

FUNK AND WAGNALLS COMPANY, Publishers
354-360 Fourth Avenue, New York

The Mind at Mischief

Tricks and Deceptions of the Subconscious, And How to Cope With Them

By WILLIAM S. SADLER, M.D., F.A.C.S.

Delving into the occult depths of our own mind is the new adventure. Dr. Sadler, using language which the layman can easily understand, leads us through hitherto unexplored regions of that mysterious world within us, letting us see the "subconscious" in the performance of its good acts and also of its malicious and harmful tricks.

Science has discovered that in the background of our personalities are wells of latent memories that account for dreams, automatic writings, and many of the phenomena connected with hysteria and other abnormal psychic states. It is this little-known field just beyond the borderline of normal psychology which Dr. Sadler has explored, examining it with the eye both of the psychologist and of the physician. He has discovered the cause of much imaginary ill-health among women and of many business failures among men, and tells what methods are used to cure them.

Dr. Sadler is an authority in this field, drawing upon his twenty-three years of experience as Director of the Chicago Institute of Research and Diagnosis for a large number of interesting cases by way of illustration. Altho the author of many books on mental hygiene, Dr. Sadler's "The Mind At Mischief" is his crowning work—an original contribution to psychological science, yet written so that the ordinary reader can get the full thrill of its revelations.

8vo, Cloth. $4.00; $4.14, *post-paid.*

FUNK AND WAGNALLS COMPANY, Publishers
354-360 Fourth Avenue, New York

THOUGHT-CONTROL IN EVERYDAY LIFE

By JAMES ALEXANDER

Author of "The Cure of Self-Consciousness," etc.

A non-technical, accurate, and sensible presentation of the truths of psychology and their everyday application to the attainment of mind-control, the overcoming of bad habits, the conquering of obstacles, and the achieving of the success for which you aim, both physical and mental. It offers a clear logical explanation with but one objective toward which all statements aim—the control and direction of mind, your own and others. It is not only believable but actually workable.

What Critics Think of It

"A book such as 'Thought-Control in Everyday Life' has in it the qualities that would make thousands more intelligent about themselves, happier, more cheerful, and more successful. It is a veritable path to 'know thyself,' and the path in this case is very easy to tread: arguments are easily understood: methods are clearly expressed: we see ourselves in a clear looking-glass. As a so-called 'self-helpful book' I know not its equal for simplicity and easy understanding."—EDWARD W. BOK.

"I shall broadcast this book. It is eminently sane and practical — a most useful and helpful work." — THOMAS MASSON, *famous American Author and Literary Critic.*

"So much is heard about psychology nowadays that this non-technical and sensible presentation of the truths of its application should prove welcome to the student."—BOSTON GLOBE.

12mo, Cloth, 277 pages. $2; $2.14, *post-paid.*
At all Booksellers or from

FUNK & WAGNALLS COMPANY, Publishers
NEW YORK AND LONDON

What of *Your* Child's Future?

Before there is cause for worry—that is the time for you to take steps which will insure your child good health, splendid mentality, and moral stamina.

Your Growing Child

By H. ADDINGTON BRUCE

tells you how you may develop in your child a sense of responsibility, self-reliance, honesty, good manners, and explains how to eradicate undesired traits. It discusses in a common-sense way such problems as companions, punishment, proper hygiene, diet, children's reading, potential dangers from common diseases of children, religion for children, and gives a comprehensive, authoritative survey of the things you must reckon with in rearing your child.

"It is clearly written in simple every-day language. I find in it a sympathetic understanding of the physical and mental growth of a child, a sane and sober recognition of the problems that beset teachers and mothers."—*Angelo Patri*, Consulting Educator and Children's Columnist.

"Contains most valuable information systematically arranged."—*Rev. S. Parkes Cadman.*

"The book will be a godsend to multitudes of perplexed parents and to all teachers of youth."—*The Christian Endeavor World, Boston, Mass.*

"At last a book has appeared that merits with no reservations the attention of every parent and every teacher of children—a work, while complete in itself, covering every element that affects the development of the child."—*News, Detroit, Mich.*

12*mo.* ***Cloth,*** 405 *pages.* $2.50, $2.64, *post-paid*

At all Booksellers or from

FUNK & WAGNALLS COMPANY, Publishers
NEW YORK AND LONDON

THIRTY EDITIONS SINCE PUBLICATION

THE EDUCATION OF THE WILL

By JULES PAYOT, Litt.D., Ph.D.

Translated from the French by Smith Ely Jelliffe, M.D., Formerly Professor Clinical Psychiatry, Fordham University, New York.

This is a scientific yet popular work giving valuable suggestions and exercises for a judicious training of the will. In the fifteen years since it first came out in French, it has passed through *thirty editions.* Translations have been made into many languages. The work is both theoretical and practical, and has a wide number of readers in the medical profession, and has proved of vital interest to every one interested in psychology and mental therapeutics.

THE NEW YORK EVENING SUN thinks:

"His treatise is the most thoughtful, the most systematic, and, if we may so express it, the most business-like we know of."

THE BROOKLYN TIMES says:

"It must be declared in uncompromising terms that this is a valuable, perhaps a great book. . . . In this haphazard, nervous age such a book as this is a tonic. It preaches the gospel America needs."

"I find it clear, informing, and convincing. I know of no better book to put into the hands of young men. . . . The reading of this book will mark an epoch in many a youthful life."—*REV. SAMUEL McCOMB, Episcopal Theological Seminary, Cambridge, Mass.*

12mo, Cloth, 450 *pages,* $1.75; $1.89, *post-paid.*

FUNK & WAGNALLS COMPANY, *Publishers*
NEW YORK AND LONDON

How to Develop

Power and Personality

in Speaking

By GRENVILLE KLEISER

Author of "How to Speak in Public." Introduction by Lewis O. Brastow, D.D., *Professor Emeritus, Yale Divinity School*

This new book gives practical suggestions and exercises for Developing Power and Personality in Speaking. It has many selections for practise.

POWER.—Power of Voice—Power of Gesture—Power of Vocabulary—Power of Imagination—Power of English Style—Power of Illustration—Power of Memory—Power of Extempore Speech—Power of Conversation—Power of Silence—Power of a Whisper—Power of the Eye.

PERSONALITY.—More Personality for the Lawyer—The Salesman—The Preacher—The Politician—The Physician—The Congressman—The Alert Citizen.

"I give it my hearty commendation. It should take its place upon the library shelves of every public speaker; be read carefully, consulted frequently, and held as worthy of faithful obedience. For lack of the useful hints that here abound, many men murder the truth by their method of presenting it."
—S. Parkes Cadman, D.D., Brooklyn, N. Y.

"It is a book of value. The selections are fine. It is an excellent book for college students."—Wm. P. Frye, *President pro tem. of the United States Senate.*

12mo, Cloth. 443 pages. Price, $1.75; by mail, $1.89.

FUNK & WAGNALLS COMPANY, Publishers

NEW YORK and LONDON